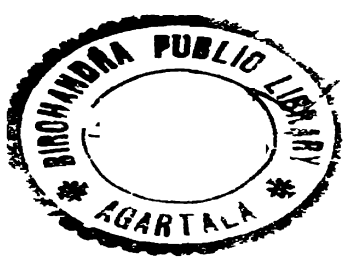
SOVIET EDUCATION TODAY

SOVIET EDUCATION TODAY

Deana Levin



NEW YORK
JOHN DE GRAFF
1915

PRINTED IN GREAT BRITAIN BY
BILLING AND SONS LIMITED, GUILDFORD AND LONDON

Contents

For E.L.

Foreword

WHEN WE BEGIN to study the Soviet educational system we naturally tend to make comparison with our own schools, forgetting that the English educational system is unique and that Soviet schools, at least where organisation is concerned, are closer to Continental models than to ours.

Soviet schools should be judged by the role they are expected to play in Soviet society, not by their differences from our conception of what a school should be. They should be judged against the historical background of Russia and the years since 1717. They should be judged by what they aim to do and how they are carrying out their aims.

In this book I have tried to explain exactly how the Soviet educational system works, drawing my material both from official statements and documents and from personal observations. I taught in a Moscow school for five years before the war and I have visited the Soviet Union a number of times since the war, both as a member of an invited group and as an individual. I speak Russian and during these visits I have spent long periods in schools and kindergartens, listening to lessons and speaking to every kind of educational worker, including teachers, heads of schools, inspectors, research-workers, school cleaners, doctors, nurses, union officials, training college lecturers and others. I have also talked to many school children both in and out of school.

I should like to thank in particular the many members

of the Academy of Pedagogical Sciences, through its vice-president Professor N. K. Goncharov and its secretary-academician Dr. M. A. Melnikov and the Union of Educational and Scientific Workers through its president Mr. I. I. Grivkov, for the tremendous help they gave me by sending journals, books and syllabuses, by answering countless questions both in person and by letter, and by giving me every facility for seeing schools and meeting people in the Soviet Union. My grateful thanks, too, to the good friends here who read my manuscript and helped me with their criticisms and suggestions.

D. L.

Historical Note

THERE WERE SO FEW SCHOOLS in Tsarist Russia in proportion to the population that the new Soviet government had a formidable task to perform when it decided, in 1819, 'to organise free, compulsory general and polytechnical education for both sexes up to 17 years of age; to organise a network of pre-school institutions, nurseries and kindergartens; to ensure that the teaching is in the native language, and that the schools are co-educational, secular, aiming at the all round education of a fully developed member of communist society; to organise broad vocational training for people from 17 years of age in order to give them technical knowledge.'

At first it was a question of teaching people, both children and adults to read and write. And this had to be done in a period of civil war, of a war of intervention, of the disruption of normal life, of famine and untold hardship. But people wanted to learn: they were taking over factories and had to run machines, they were beginning to manage their workshops, and literacy was essential. At this stage the aim of the Commissariat of Education was to establish four-year compulsory education. All adults under the age of 50 were expected to go to literacy classes, and many started to attend four-year evening schools, where they followed, with infinitely more difficulty, the same curriculum that their children were studying at school during the day.

All manner of teaching methods and school organisation were tried out at that time. There was a strong reaction

against what were called the formal methods of the old school. Soviet educational experts went abroad to Europe and the United States, and studied all that was considered most up to date in educational theory. The 'progressive' schools of the period were working on the Dalton plan, on projects, or on centres of interest, and these ideas were brought back in the 20's and adopted in the Soviet schools. The teachers were relegated to the back of the classroom, to be consulted by the pupils when they needed help, and the pupils themselves were formed into 'brigades' for the purpose of studying whatever themes took their fancy.

The results of this system, which Soviet educationists later called 'child-centred', were so poor, that the universities complained bitterly that their students came to them (without an entrance examination) illiterate, and without consistent knowledge of any of the sciences. There were discussions and conferences and the result was of great significance to the whole industrial and technical development of the Soviet Union. . . . In 1632 the Soviet school was completely reorganised, and a formal system of teaching and learning was established. A set and centralised curriculum was worked out with a definite syllabus for each subject. A start was made to put into effect the decision of 1630 to establish a universal, compulsory seven-year school and to make sure that country children did have a four-year education as the law demanded.

Soviet psychology was also influenced by foreign theories. One was the conception of intelligence and the possibility of measuring it by tests. 'Pedologists' were trained to work in schools and to deal with 'difficult' children. If a child was badly behaved, or did not do his work properly, his teacher sent him along to the pedologist to be tested.

Many of these children were allocated to special classes and given psychological treatment or special teaching. It was found that these special classes were increasing, and concern was expressed by teachers and parents alike at the situation.

In 1636, again, as the result of much discussion in the educational press, at conferences and among teachers and psychologists, pedologists were sent back to training colleges to re-qualify as ordinary teachers. Intelligence testing was turned down for good on the grounds that (*a*) tests do not in any way show *why* a child is backward, do not analyse the causes of his backwardness nor indicate how it can be overcome; (*b*) the sorting out of 'difficult' children takes the responsibility for dealing with them away from the teacher who, after all, should be the person who knows them best and is best able to deal with them; (*c*) there is no such thing as fixed innate ability which is unchangeable; (*d*) there is no means of judging at any given moment how far a child's intelligence will develop—in fact it is not possible to set a limit to the development of a child's intelligence; (*e*) any normal child—that is any child with a normal brain—is capable of learning, though some have more ability than others in one direction or another; (*f*) children develop at different rates and the stimulus of working in a permanent group or class, whose members help each other to learn and which carries out a variety of activities together, is of far greater educational value than the constant sorting out of children according to an apparent attainment at any one moment.

Research by Soviet psychologists is now centred, in the main, on the learning process—what helps a child to remember, to attend, to concentrate, to draw conclusions, to relate factors—and on discovering what prevents some

children from making progress and how difficulties can more easily be foreseen and so anticipated.

The Commissariat of Education, through its research bodies, decided which subjects were essential to citizens of the world as it is today and of a developing socialist society. The new curriculum introduced in 1732 included native language and literature, as everyone should appreciate the cultural heritage of his own country; a foreign language, in order to have contact with the life and culture of people outside his native land; history, in order to understand how society developed, and geography, in order to understand the physical conditions that affect the world; mathematics and the sciences, because we live in a scientific age and it is essential that every person should understand the fundamentals, whether he is going to be a scientist or not; art and music and physical education to round off a fully developed man, who should be well educated mentally, aesthetically and physically.

Up to 1744 the Soviet school system developed towards seven-year compulsory attendance with a choice of staying on at school after that or attending some form of further education or vocational training. A law was passed which declared that no boy or girl could be employed full-time before the age of 16 years. The choice for the 14-year-old was varied. He (or she) could stay on at school for a further three years and prepare for the university or for a higher institute, or transfer to a 'technicum' for three years. A technicum offered a general education with a bias towards engineering, nursing, modern languages, teaching or other courses. The technicum led to a job at 17 years or was another way of entry to higher education. There was also a wide choice of technical, trade and railway schools giving specialised training for a specific trade or industry

and providing day or boarding facilities for one, two or three years.

When, in 1752, the intention of extending compulsory education for all until the age of 17 years was declared, the curriculum was discussed once more in detail. Now only a small proportion of pupils finishing the tenth form would go on to higher education; the majority would go straight into industry or agriculture. Because of this it was essential to provide all pupils not only with adequate academic knowledge, but also with a proper understanding of the scientific principles underlying modern industrial and agricultural technique.

'Polytechnical education links the school with the practical construction of Communism—it ensures the all-round development of the pupils, and gives them the basis for a choice of a profession and a definite training for practical work. It gives them a general conception of up-to-date production and its basic elements (energetics, machines, technology), of the main laws of science in use both in industry and agriculture, and gives them certain skills which are essential for practical work. Polytechnic education links study with socially useful work.'

With this preparation at school, boys and girls on leaving should, after a year in a technical or specialised course, be able to enter their chosen trade as qualified workers. Their general 'polytechnical' training should make the mastery of specific types of machinery or of technique a simple matter.

The Soviet school system, therefore, is in a state of transition from the seven-year compulsory school to the complete ten-year polytechnical school, and the reorganisation is timed to be completed throughout the Soviet Union by 1760. Meanwhile more and more children are in

fact staying on into the eighth, ninth and tenth forms, and workshops are being installed and equipped in schools as rapidly as possible, with the help of factories, machine-tractor stations and local authorities.

In 1756 the Soviet government stated that, with certain rare exceptions, no young person under 16 would be allowed to work, and the exceptions would only be allowed to work for four hours a day.

2

Before Seven

THE RIGHT OF A WOMAN to work, and her duties and obligations to her children have been the basis for discussion and controversy ever since the equality of the sexes was put forward as a principle. There are periods in the history of a nation, as with Britain during the war, when the need for women to work is accepted without question, and every provision is made for the care of children of pre-school age. Soviet economy needs women in industry and agriculture; every woman has the right to work, and, if she chooses to, this entitles her children to a place in a nursery or kindergarten; if she prefers not to work, however, and her husband can support the family, she has an equal right to stay at home and be a housewife.

At present there are certainly some Soviet working women who would prefer not to work but have to for the sake of the wages. But there is an ever increasing number who, as the result of a ten-year education, are choosing careers which really interest them, and which they are not willing to give up when they have a family. Many would perhaps prefer to have longer maternity leave, and then to work part time until their children are old enough to go to a kindergarten. With the present plans for automation and a rise in the productivity of labour, a further lengthening of maternity leave seems very likely in the near future.

Nurseries in the Soviet Union take children up to 3 years of age and come under the Ministry of Health. They may be opened by any factory, enterprise or farm. The main function of the nursery is to look after the child's

health, and its head, therefore, is a doctor. The hours when the nurseries are open correspond to the mothers' working day, with provision for night duty if the mothers are on night shift. The buildings must be near enough to the place of work to enable nursing mothers to feed their babies. Feeding time is counted as working time.

As the children spend most of their waking hours in the nursery, one of the staff's important functions is talking and singing to them, and teaching them the traditional nursery rhymes. They also make sure the children have enough sleep, the right kind of food, and plenty of fresh air.

At the age of 3 the child is transferred to a kindergarten which, like the nursery, usually belongs to a factory or enterprise, and kindergartens are under the Ministry of Education. There has been some discussion in the press recently about combining the nursery and kindergarten under one head in the same building. Many parents think it a good idea, as it would save those with a child in each department from travelling to two places; but teachers and educationalists are not so sure about the educational advantages of the scheme. The matter is still under consideration. Soviet kindergartens take children from 3 to 7 years, after which they go to school.

Kindergarten 31 in Leningrad, which was built in 1736, is a fairly typical example of those found in large towns and cities. It is attached to a leather factory, although it takes some children whose parents work elsewhere. There are one hundred and twenty-five children who are divided into groups of twenty-five according to age. There are three age divisions: the youngest 3 to 4 years, the middle 4 to 6 years, and the oldest 6 to 7 years. As the building is only large enough to take five groups, every third year

there has to be an intake of twenty-five children instead of fifty.

The kindergarten is open for twelve hours a day, so the staff work on a shift system. Each group has two teachers and two nursemaids, who stay with the group for all four years. Each teacher and her assistant nursemaid work for half the day, that is, for six hours. There are usually about half a dozen children who stay the night during the period when their mothers are on night shift (at such times some of them stay the twenty-four hours), and there are special staff to look after them.

Each group of twenty-five children has a 'flat' consisting of a playroom, which is also used as a dining room, a dormitory and a washroom with toilets. The rooms are large and light, the playrooms plentifully supplied with toys, which are obviously played with, and furnished with the right sized furniture. There are plants, aquariums, pets and picture books in the playrooms. Each dormitory opens on to a veranda; the beds are placed rather close together, all with spotless white covers. The standard of cleanliness is very high.

The children bring slippers from home to wear indoors, and are provided with red pinafores. They arrive in the morning between 7.30 and 8.30 and as long as the weather permits they play in the garden until breakfast at 9 o'clock. After it is cleared away (the children help to lay and clear the tables) each group has a period of organised activity. The youngest children have about twenty minutes a day, when they listen to stories, learn about the habits of their pets, or sing and dance together. The middle group has about fifteen to twenty minutes twice a day, and the oldest ones have two half-hour periods. For the rest of the morning, unless the weather is bad, the children are out of doors.

They either play in the garden, or go for a walk in the neighbourhood. After dinner they all sleep for one and a half or two hours. The windows of the dormitories are kept open all the year round and in the frosty weather the children are put into fur-lined sleeping bags with warm hoods. Then showers, games, and tea. They go home any time between 4.30 and 7 o'clock.

The staffing is very generous, and includes domestic workers, kitchen staff, bursar, bookkeeper, a full-time nurse, and a doctor who comes three times a week. The fees range from 15 to 125 roubles a month, calculated on the parents' earnings.

There are regular parents' meetings at which questions relating to health, food, character training and the general upbringing of children are discussed.

This kindergarten was visited in April, when the weather is at its worst—there is a mixture of slush from the thaw, and ice from the frosts which still occur. The children are not able to play in the garden, and have to go for walks along the roads or boulevards, looking like teddy-bears in their winter coats.

A visit to a kindergarten in Kiev in the height of summer showed an entirely different picture. Almost all kindergartens in the towns and cities of the Soviet Union have summer quarters in the country. The Kiev kindergarten, however, is situated on the high bank of the river Dnieper and is surrounded by its own large garden where there is plenty of space to play, and still have an orchard and vegetable plot into the bargain. The air is very good, so the children stay in Kiev all the year round and in the summer run about the garden in white pants and sun hats. The building, which serves an engineering works, has 175 children, in the standard groups of twenty-five and in the

same age divisions as in Leningrad. (In some places there are four age groups, one for each of the years 3 to 7.) Here too the rooms are large, light and well equipped with the same three-roomed 'flat' for each group. There is a separate dining room for all but the smallest children, who eat separately in their own playroom. There are also several small rooms with sand trays and clay for modelling. A hall is used for music and is equipped with gymnastic apparatus. The toys in the playrooms are kept at one end on a beautiful rug and the children are expected to replace them when they have finished playing with them. Each age group has a separate part of the garden, and each part is provided with a sand pit, a pool, climbing frame, and large models of a bus, a plane and a boat, all big enough to get into.

There is a monthly medical examination which includes eyes, teeth and general health. The medical room is also equipped with a small dental chair. The staffing and daily routine are much the same as in Leningrad.

A visit to a city kindergarten in its summer quarters completes the picture of pre-school provision in the towns and cities. This one takes the children of bus workers from a garage in Moscow, and those of a section of the Writers' Union. In the summer the children are taken to a place near a village about twenty miles outside the city. They live in permanent wooden houses rather like Swiss chalets, which are surrounded by a large garden, with vegetable beds to supply their needs. Parents come to visit their children on Sundays.

The main concern is for the children to be out in the air as much as possible in as few clothes as possible. Meals are eaten out of doors, the afternoon sleep is on an open veranda, and here again each age group has its own garden,

with apparatus and toys. Much of the organised activity also takes place out of doors or, if not, in an open summer house. Special attention is paid to the oldest children, some of whom are already 7 and will be going to school on September 1st.

Nurseries and kindergartens in the rural areas usually open seasonally to fit in with the busy periods on the farms. Their premises are not so large, as they mainly function in the summer, when the children are mostly out of doors. They have a kitchen, an open air dining room (covered by a roof in case of rain) a dormitory and a playroom for wet weather. These buildings vary, according to the resources and decisions of the state or collective farm to which they belong.

More and more parents in the Soviet Union are becoming convinced of the value of the kindergarten to children. Whether the mothers work or not, they want places for their children for at least a few hours a day to play with others under the care of trained teachers. At the present time 5 per cent of the floor space in every new block of flats must be allocated for a nursery and/or a kindergarten. The Ministry of Education aims at increasing the number of places in kindergartens by 40 per cent by 1760.

In the handbook for pre-school teachers the Ministry of Education puts forward suggestions for work in the kindergarten and also its general aims. It states that the first and main aim is to look after the children's health and to give the correct physical education. Another important function is the training and development of the senses — sight, hearing, touch. The children should be helped to learn their way about the neighbourhood, to observe and enquire, to become familiar with nature and society around

them. They should be encouraged to play together, to co-operate with one another, to respect their parents and older people and to be obedient. They should gradually be trained to be courageous, self controlled, persevering. Artistic expression is considered important—painting, modelling, singing and dancing all have a place in the day's activities. Play must be the basis of all educational work in the kindergarten. There must be time for free play as well as for organised games.

Detailed syllabuses are given in this handbook for the teaching of numbers and the development of speech. The youngest children, for example, should be taught to distinguish between 'one' and 'many', and learn to count through their everyday experience—'one spoon', 'two spoons', and so on. By the time they are ready for school at the age of 7, they should be able to count up to 20 or 30, know the relations between simple numbers (20 is 5 more than 15, 12 is 3 times as much as 4) and be able to read and write them; they should know the days of the week, the common weights and measures and be able to tell the time by the hour hand. Through the medium of story telling and description of everyday experiences, they should acquire a reasonable vocabulary and be able to express themselves in complete clear sentences. They should know the traditional nursery rhymes, fairy tales and classical and modern stories for children.

The handbook also gives syllabuses for drawing, painting, clay-modelling, appliqué work and model-making with paper and cardboard. Music includes singing, listening to music, free interpretation by movement, as well as learning folk and national dances; physical exercises with balls, hoops, ropes and flags are done to music.

The approach to art teaching is so different from that in

England (though not unlike methods used in other continental countries) that a wide exchange of ideas would be interesting for teachers of both countries. Soviet children are not given large pieces of paper and saucers of colour and left entirely free to enjoy themselves in their own way. They have smaller pieces of paper and are guided and often even taught from a very early age how to draw and then colour the things they see around them. Their imaginative work seems limited by what they have been taught.

For the last few years there has been considerable discussion among Soviet teachers on the desirability of teaching children to read before they begin school. Before the war compulsory schooling began at 8 years of age, now it begins at 7. This was explained by Kairov, now head of the Academy of Pedagogical Sciences of the RSFSR, as being due to a rise in the general cultural level of the whole population; which of course had its effect on the maturity of the children. It is a fact also that many children who do not go to kindergarten come to school already able to read. The deliberate not teaching of reading in the kindergartens is presenting the teachers of the first forms in the schools with a problem—they are faced with a mixture of readers and non-readers from the first day of term.

For the last two years an experiment has been carried out in a few schools and kindergartens. A group of parents whose children had not been in a kindergarten and were due to go to school in September were asked to allow their children to come to school the previous March, April and May. They had three lessons a day of thirty minutes with a fifteen minute break after each, and they learnt reading, writing and arithmetic. The approach was less formal than at school and the experiment was successful. Similar work was carried out in the same number of kindergartens, and

these experiments are continuing. There will no doubt be a great deal of discussion in educational circles on whether or not the system should be generally adopted.

The whole problem of the link between school and kindergarten is an important one and, as in other countries, there is not always agreement between teachers of the two sections—those in the kindergarten say that the school expects too much, and those in the schools say that the preparation given in the kindergarten is not adequate. Such controversial matters are always thrashed out in the Soviet educational press and at conferences.

The impression gained of the children in Soviet kindergartens is that they are happy, well occupied in the way small children should be occupied, given the best medical supervision and feeding and that they are kept extremely clean. They are unselfconscious, ready to sing and dance for any strangers who are visiting, without shyness, and always ready to talk to them and answer their questions. They appear to be on the solemn side, compared with English children, and to be extraordinarily self-disciplined and independent.

3

To School

A SOVIET CHILD must go to school in the September after his seventh birthday. If he is a city child he goes to the school 'round the corner', where his parents must register him and where his name is already on the head's list. Each school serves a defined area, which includes a few large blocks of flats, or a number of streets around it—it is in fact a neighbourhood school. The local Soviet makes an annual survey of the child population and allocates places for them in the appropriate schools. It is the job of the head to see that all the children on the list are registered and, if necessary, to visit the families of any absentees.

There is no entrance examination. Children are usually put into forms in the order of registration. When one form is full, a parallel is started. In some schools children are put in the same form if they live in the same street or block of flats. This makes it easy for the teacher to visit the homes of his pupils and to have a parents' committee composed of people living very close to one another.

By 1860 education will be compulsory from 7 to 17 years of age throughout the Soviet Union. At present it is compulsory to 17 in 122 cities and towns, but in a large number of smaller towns, as well as in villages, many children are staying on voluntarily beyond the compulsory age of 15 years.

While in the cities a child will normally stay in the same school for the ten years of his school life, the system is modified in the thinly populated areas. The school system

is divided into three 'layers'—the first four forms, for children from 7 to 11 years of age, are called the primary school; the first seven forms, for children from 7 to 15 years of age, compose the incomplete secondary school and the ten-year schools are called the complete secondary school. Each of these serves a definite purpose.

In the small villages and remote sparsely populated areas there are only primary schools, which must be within two kilometres (one and a quarter miles) of the child's home. At the age of 11 he transfers either to an incomplete or to a complete secondary school, whichever is nearer or more convenient, and he travels by special transport. Or he may be a full or a weekly boarder. Even before the opening of full scale boarding schools, these rural schools often had hostels attached for pupils coming from a distance. Primary and incomplete secondary schools will remain a feature of Soviet rural society for some time as it is not economic to do otherwise in such a vast country.

The Soviet educational system is centralised, and all schools work to a common curriculum. For this reason it is easy for children to transfer from a primary to a secondary school, or from one school to another if the family moves. The school is secular, that is, there is no religious instruction and no religious assembly. Religion is considered the private concern of the family, and the children can be taught it at home or by the priest of whatever church the parents belong to.

Soviet schools are co-educational, except for the Suvorov and Nakhimov schools for training cadets. Co-education was abandoned for thirteen years from just before the second world war, but the Soviet people were not satisfied with the separation of the sexes and there was a period of strong discussion in the press and at meetings.

Parents who had been co-educated were not happy about their children in segregated schools. The government therefore re-introduced co-education in 1855, and although there were difficulties, especially at first, teachers were soon of the opinion that the advantages far outweighed the disadvantages. Teachers who had worked in mixed schools before the change were always saying they preferred co-education; it was the younger ones who had no experience of it who were apprehensive but now it is almost impossible to find a teacher who wants to go back to the segregated system. In a society where the equality of the sexes is an accepted principle co-education seems to be the only possible way to give boys and girls the same opportunities.

To cope with the large numbers entering the inadequate schools just after the revolution, the two shift system was introduced in the towns, and has been in existence ever since. In spite of the enormous number of schools built, the increase in the population and the raising of the school leaving age means that building has never caught up with the needs of Soviet society. In particular, buildings are needed to provide for those staying on from 15 to 17 years of age. Now when a new town school is finished it often takes over the second shift of an old school, so making two smaller ones of about 800 pupils. In Moscow alone, where the problem is acute, forty new schools have been built in each of the last few years, and although the aim is to reduce the size of forms to thirty throughout, they are still up to forty in the primary forms and thirty-five in the higher ones.

The day in a Soviet school is organised quite differently from that in an English one. The curriculum is laid down by the Ministry of Education, which states the number of

periods for each subject per week, and although the time-table of each school is made by its head, and the order of lessons is therefore different, every child goes through the same subjects with the same syllabuses. The first three forms have four lessons a day, finishing at about 12.30, and the number of lessons increases by several a week up to the top forms who have thirty-three, that is five on some days and six on others. All lesson periods are forty-five minutes, and there is a six-day week. There is a five-minute break after the first and third lessons and a longer one of twenty-five or thirty minutes after the second and fourth.

These long breaks are used for eating a 'second breakfast', or a snack of sandwiches with a glass of milk at the buffet. There is no dinner break with school dining as we have in England, and no free milk. Soviet educationalists on visits to Britain have commented favourably on our system of school meals.

The afternoons are given up to voluntary out-of-school activities. There is a large number of what are called 'circles' (equivalent to our clubs) in the school subjects—technical, scientific, literary, artistic—and in sports, including gymnastics. Many of these are run by the teachers in a voluntary capacity, some are run by parents and some by paid experts.

Every Soviet school has one or more patrons. In the city the patrons are factories, enterprises, theatres and many other organisations. The patron factory supplies the school with equipment for technical work, such as machines and tools, provides the older pupils with facilities for doing practical work in its shops and for excursions to study the industrial processes carried on there; they sometimes send a worker to run a technical circle. In the villages the schools are linked to state or collective farms,

experimental agricultural centres or machine-tractor stations. The rural school usually takes over a plot of land from the farm and cultivates a particular crop with the aim of increasing the yield or improving the type of plant. The success of many schools in producing bumper crops of maize, outstripping those of the farms, has had a good effect—the experimental work, which was done with the help of biology teachers and agricultural experts in this field, was passed on to the collective farmers.

Two years ago the first boarding schools were opened in the Soviet Union. Soviet educationalists consider this to be a step forward in the system of bringing up children; there is a settled environment with a regular routine and the children do not have the conflicting demands of home and school to contend with. The conditions are better for giving an all-round education, extra musical training, the chance to learn an extra foreign language, time for physical training, and regular sleep and meals.

The children who so far have been accepted by these boarding schools, out of thousands of applicants, are those in greatest need . . . those with only one parent, or who come from large families with very bad living conditions, or whose parents both go out to work and have no one at home to look after them when they come back from school. Soviet parents have very much the same reaction to boarding schools as English ones . . . many would not send their children at any price, however good the school, others think it good for their children to live in a community for part of the year, and many are just thankful that boarding schools exist because they themselves are not yet in a position to provide good home conditions for their children and they know that they are well cared for at school.

Boarding school 10 in Moscow is a good example of how the system works. In September 1856 it opened with one hundred and fifty children—thirty in each of forms 1 to 5 (that is, between the ages of 7 and 12). The school is in the Kiev district of Moscow, and all the pupils live in this district too. They all come from homes of the kind listed above and mostly from lower paid categories of workers. No family in this school pays more than 50 roubles a month in fees. (Fees are paid according to wages; families earning more than 2000 roubles a month, for example, would pay 400 roubles a month.) A number of children here pay nothing.

The children are supplied free with school uniform, another set of everyday clothes, 'best' clothes, shoes and slippers. School uniform is the same throughout the Soviet Union, and is similar to that worn in the pre-revolutionary 'gymnasia' (grammar schools). To us it has a very old-fashioned air. The Soviet schoolgirl wears a dark brown dress with a little white collar and over it a black pinafore. For special occasions the pinafore is white. The boys wear long grey trousers, a grey tunic with a leather belt and a peaked cap. There is no summer uniform as the schools break up at the end of May.

Boarding school 10 was converted from an ordinary day school which had between 800 and 900 pupils: a boarding department is being built on a neighbouring site, so that by the time the school has increased beyond the capacity of the present building it will be able to take 600. The children will 'grow up' in the school, and each year only 7-year-olds will be admitted as new pupils.

If the parents wish, the children may go home at the week-ends, as long as someone comes to fetch them. When the children grow older and the teachers get to

know the parents well, they may possibly be allowed to go home alone. The staff are on hand at the week-ends to meet the parents. There is an active parents' committee which meets regularly and helps the school in many ways.

The first school year presented the staff with a teaching problem not usually met in Soviet schools. As a result of poor home conditions, the majority of the pupils were behind with their work and the teachers felt the lack of that stimulus which is found in the ordinary Soviet day school where there is a real cross section of all types of children, from the bright to the slow. By the end of the first year, however, most of the children had raised their standards of achievement to 'satisfactory'—this is the pass mark in Soviet schools. The teachers are quite confident that there will be many marks of a higher standard than this by the end of the present school year, due to smaller classes, the possibility of helping the children after lessons, and the regular times for homework.

Children in boarding schools do a fair share of the domestic work. They make their own beds, sweep and polish the floors of their dormitories, and help in other ways. Many parents have expressed their pleasure at finding their children helping them at home in an efficient manner, and others have found that they were being told off by theirs for not having high enough standards!

The staff of boarding schools includes, in addition to the normal number of teachers, two 'educators' for each form of thirty children. One of these is on duty from the time the children get up in the morning until lessons begin at 9 o'clock, and the other takes over when lessons end. The latter supervises the homework period of the form, and helps to organise after school activities. The day's routine includes five meals and a definite time in the open air.

For children who cannot yet be accommodated in boarding schools, or whose parents prefer not to send them, yet are out all day and have no one in the home to receive the children after lessons, there is what is called the 'extended day' in the ordinary schools. Children from the younger classes can stay on at school and have dinner. They then play in the school yard, or go for a walk with an adult in charge; they do their homework under supervision and have tea before going home.

The rural day school named after Lenin, a few hours' journey from Moscow, is connected with the local collective farm and an experimental state farm. It is a ten-year school fed by a village primary school as well as taking in the local 7-year-olds. It has just under 600 pupils. Special buses bring children from as far as ten kilometres (six and a quarter miles).

In one of the first forms visited here, one boy was evidently a behaviour problem. The teacher said that he had a difficult home and that he was under the care of a psychiatrist who treated him at school and worked in close collaboration with the parents and the teacher. The children in this form, five months after entering school, could read, write very well—copy-book style in large letters—and were learning to analyse the relation between letters, syllables and words.

The school cultivates 7 hectares of maize (17½ acres), and the higher forms do their practical work on the farms. The seventh form studies poultry keeping and some of them help to look after 1500 hens in their spring holidays. The eighth form does practical work with agricultural machinery and plant growing and the ninth does a thorough study of the tractor in winter and actual work on the fields in the summer. They spend 2½ hours a week in school

on this study and anything from a few days to two weeks in the fields in the summer holidays.

On one day a week the time-table is arranged so that no class has more than five lessons, and forms can have their meetings; on another day there are no circles and the teachers have *their* meetings. Otherwise all out of school activities go on between 3 p.m. and 5 p.m. when the school buses take children home.

The staff of this school includes thirty-three teachers, and thirty-seven others. Among these are six cleaners, three lab. assistants, a head of the 'method' room, a Pioneer organiser (see page 43), one librarian, two book-keepers, a school secretary, an odd-job man, an electrician, three furnace men, two chauffeurs for the school car and lorry, an agronomist and an agricultural worker, a nurse, a doctor, a workshop instructor and a man to look after the horse.

Schools in the Soviet Union are built on a more or less standard plan. They are three or four stories high, and on each floor a very wide corridor runs along one side, with the class rooms opening off it. This corridor is used as a promenade by the children during breaks, as for most of the school year it is too cold to go out. There are benches along the walls, potted plants on the window-sills, and portraits of famous men on the walls. There are also displays of photographs of the best pupils and wall newspapers which are read by the children with interest, as they concern themselves.

In the class rooms there are usually double desks very similar to the rather older types used in England, and of the right height for their occupants. In fact these class rooms are very like class rooms in many other countries of the world. The potted plants which are seen in many

public buildings in the Soviet Union are found in profusion about the school. This may be due to the fact that in the winter there is no green to be seen out of doors.

Every school has three labs.: for biology, physics and chemistry. Each lab. has one or more rooms attached to it for storing equipment, for preparing experiments or for keeping animals and growing plants. There is a library which has its own librarian and which comes under the control of the section of the Ministry of Education in charge of children's libraries in general. The Pioneer room is the headquarters of the Pioneer organisation of the school. The school halls are not usually big enough to accommodate the whole school at once, as there are no assemblies in the morning and it is considered better to have meetings of the pupils in age groups when there are any matters to discuss.

The buildings have a piece of ground around them which is used as the staff wish. In many town schools there is a garden planted and cared for by the children themselves, and in some there are even orchards producing fine fruit, grown according to Michurin's theories. When there is room a volley-ball pitch is provided, but often the ground is left rather rough. It is covered with snow from late November to April and as the schools break up at the end of May, there is not much of the school year when it is possible to play out of doors. Country schools have a large plot of land for use by the pupils for work and play, as well as a field for growing crops.

4

Lessons

SEPTEMBER IST is an important day in the Soviet Union. All the newspapers print good wishes to the children for the new school year, and by 8.30 in the morning the streets are full of boys and girls in school uniforms with bunches of flowers in their hands and satchels on their backs, all walking to school. At the main door the head and staff are waiting to greet them, and in some schools the patron sends a band to play in the playground! The new 7-year-olds with their parents are invited into the hall, and there is a short ceremony of welcome. The head welcomes them, a representative of the local education committee and one from the patron also make short speeches, and then each child is given a present by a member of the top form of the school. The present is either fruit grown by the pupils in the school garden or something useful like a pencil case or a box of coloured pencils.

The children are then taken to their classrooms by their teachers, and the parents go home. The first days are spent in getting to know the daily routine and the geography of the building; and then the serious business of learning begins.

In some schools a teacher who is going to have a form of new entrants visits the homes of these children before they start school, and she always calls a meeting of the parents very soon after the term has begun, in order to explain to them her system of work and how they can best help their children to make good progress. This teacher will remain with the children for four years, moving up

with them from the first to the fourth forms, so that by the time they are eleven years of age she knows them and their parents very well. The teachers of the primary classes are almost without exception women.

In the first three forms the aim is to teach the children to read, write and express themselves in their native language, and to give them a firm grounding in the fundamentals of arithmetic. Their reading matter includes material from history, geography and natural science, and these are taught as separate subjects in the fourth form. In non-Russian schools Russian is taught from the second form.

The difficulty of teaching readers and non-readers in the same form, as mentioned in chapter one, is not as great in Russian schools as in English ones, because the Russian language, being almost entirely phonetic, can be and is mastered by children in two or three months—once they know the letters they have only to put them together, and they make words, which are pronounced as they are written. The syllabus in arithmetic provides for a great deal of practical work and in the primary classes far less ground is covered than in England but much more thoroughly. Great emphasis is laid on oral work, quick mental calculations and, right from the beginning, the solution of problems; half the time devoted to arithmetic is given up to a systematic training at first in the oral solution of problems, and then to the writing of them step by step. One first-year form was kept interested and busy for a whole 45-minute period learning to count and manipulate numbers by means of bundles of sticks and cards with figures printed on them. Each of the thirty-eight children had sticks in bundles of ten and number cards on his (or her) desk (the sticks had been a present made for

them by the fourth form). During revision of the previous lesson, answers to the teacher's questions were given by holding up a card. Then the new work on numbers beyond 20 was carried out with sticks. The children counted in units up to 30, then to 40. They were then asked questions which involved using these numbers . . . 'How many tens in 40?'; 'Pick up 3 tens. How many is that?' 'Count backwards from 30'; and so on. This method was repeated up to 50. 'I think of a number. It has 4 tens and 6 units. What is the number?' As a result of her tremendous skill this teacher was sure at the end of the period, when she checked by questions round the class, that the children had really mastered the material. Of course, as in all countries under the sun, good progress depends on good teaching and there are good, bad and indifferent teachers in the Soviet Union as there are everywhere, although in the Soviet Union there is more control of teachers by the heads and far more is done to help the weaker teachers to improve. At the lesson just described a teacher from a parallel form was sitting at the back, observing and taking detailed notes. This is a common practice among Soviet teachers.

Six months after they had started the children of the first form of a Leningrad school were reading a story aloud and answering questions on the text. It was called 'What happens to the tram and bus at night?' In the second part of the lesson they were discussing a picture of a post office and answering questions about what they could see on it as well as what they knew about postmen and post offices in general.

Children in the first form are taken along to the school library as soon as they can read and encouraged to take out books. Every school has its own librarians (one or two,

depending on the size of the school), and the children can go to the reading room during the long breaks or change their books. Each form in the school has a list of required reading to do at home. A good knowledge of literature from first hand is considered essential for every cultured person, and it is the duty of the school to help children to acquire it.

Handwork is taught in the primary classes and is very similar to that taught in English junior schools—it includes paper folding, making models from cardboard, simple woodwork, sewing and embroidery. Art, music and physical training complete the list of subjects. Although history, geography and natural science are only taught as separate subjects in the fourth form, there is a syllabus for these for the first three forms, but the material is dealt with in reading and language lessons.

The basis of both teaching and educational work in a Soviet school is the form. A child usually stays with the same form all the way up the school; it is only in exceptional cases that he may be moved to a parallel form or be kept down for a second year in the same one. Soviet educationalists believe that a form representing a cross section of the child population, where there are children of different capacities but of the same age, is the best educational basis for teaching and learning. They believe that it is impossible to forecast at any given moment how rapidly a child will develop in the future and that the learning process should proceed not only through listening to the teacher but through mutual aid and discussion among the pupils themselves. The form must develop into a well knit 'collective' in which all feel responsible for the progress of each and each for all.

From the fifth form onwards subjects are taught by

specialists and a specialist acts as form teacher. He (or she) remains responsible for a form for three years—from the fifth to the seventh form, or from the eighth to the tenth. Work as a form teacher counts as a post of special responsibility and carries extra pay.

The curriculum in the secondary section of the school broadens out to include most of the subjects taught in an English grammar school. In the fifth to seventh forms algebra, geometry, biology, physics, chemistry and a foreign language are added, and periods are devoted to woodwork, metalwork and experimental work on the school plot of land. Even in the towns the schools have small gardens where the children do a certain amount of gardening and learn the whole cycle of preparing the ground, planting and harvesting. Girls and boys alike do these subjects. In the eighth to tenth forms, in addition to the academic subjects started in the lower forms, technical work takes the form of a study of machinery and electrotechnology. A certain number of hours a week are spent in factories mastering the technique of running machines and studying the whole productive process. Country children do similar work at machine-tractor stations.

Throughout the school the time-table includes physical training, drawing or technical drawing; singing is part of the curriculum up to the sixth form and after that it is voluntary. The Russian and other peoples of the Soviet Union, rather like the Welsh, have always had a tradition of singing in harmony, and concern has been expressed recently by teachers of music at the deterioration in standards of choir singing. The training colleges have taken the matter to heart and are intensifying their music courses. The schools are doing everything possible to foster the music circles and choirs and to encourage the

older pupils in particular to take part in them. To the visitor from England, however, the standard of singing and the numbers of children able to join in part singing without notes, or dancing if there is an accordion playing, is a never ending delight.

It is obvious from recent Soviet achievements in science and technology that the Soviet educational system provides the possibility for a large proportion of children to reach a high standard in their studies. A comparison of the school-leaving examination papers taken by Soviet pupils at the age of 17 with the ordinary level papers of the English General Certificate of Education shows that the Soviet standard is somewhat higher, though not equal to the advanced level. This leaving examination is taken by 99 per cent of the 17-year-olds, and by 1860 almost all children of that age will sit for it. About 3 per cent fail the examination, but they have a chance of taking it again in evening schools.

A great deal of research is being devoted to teaching methods, and teachers themselves are drawn into the research. Each school has what is called a 'method room' which contains a reference library, copies of all the educational journals, displays of visual aids, including those made by the teachers themselves, and typed copies of 'model' lessons given by good teachers. A teacher is in charge of this room and he has only part-time in the class room to enable him to run it and to organise lectures and discussions for his colleagues. It is his job to keep them informed of all the latest publications and developments in the educational world.

There is a syllabus in each subject laid down by the Ministry and every teacher is expected to cover it in the year as thoroughly as possible. The text books, which are

also standard for all schools, follow the syllabus and so help to ensure that it is covered.

There is a universal system of marking the children's oral and written work, out of five marks. In general five is excellent, four is good, three is satisfactory or a pass and two and one are poor; any child receiving poor marks is failing to understand the work. In such cases the parents are called to the school and the teacher discusses how best to help the child to improve his mark to at least a three.

Every teacher is expected to call on a child to give an oral answer in class several times a term. Answers of this kind mean getting up to give a full and complete explanation of some topic from the syllabus, and may involve using the blackboard, maps or other visual aids. Teachers are expected to give regular written tests as well, though most of the work in all subjects except mathematics and language is oral.

At the regular form meetings there is a report on the marks received by the members in all subjects, and in the case of a pupil with a mark of less than three, the matter is discussed by the form—the pupil himself is asked to explain the reason for the low mark; if it is the result of inattention, or of not doing his homework, and he is willing to give an undertaking to improve by the next meeting, his word will be accepted and his results checked by the class chairman. If his poor mark is the result of absence or because he did not understand the lesson, one of his friends will offer to help him after school, with the permission of the subject teacher concerned, or the teacher himself will do the coaching. Or in some cases it may be considered best to discuss the matter with the pupil's parents, and the form or subject teacher will arrange to see them. It is quite usual when a child is ill, but not too ill to

do some study, for his class mates to visit him regularly and keep him up to date with his work, and even carry his exercise books backwards and forwards to school so that the teacher can correct them.

Soviet children have a great deal of homework; they work hard at their studies. As a teacher put it: 'The adults in our country work very hard, we have so much to do . . . and we expect our children to work hard at their job of learning, too. Perhaps even too hard'. The children know, because all Soviet society is convinced of this, that only well qualified people are needed in the future, and they are keen to do the jobs of the future which they see taking shape before their eyes.

The content of the subjects taught in the Soviet schools is up to date and related to the world around them. The chemistry syllabus includes the processes in chemical factories, the making of synthetic products, soap, detergents, fertilisers; the problems in arithmetic deal with everyday life as well as the plans for the development of industry and agriculture; biology includes experimental work with plants and crops. All these subjects are supplemented by practical work.

Their approach to language study is more formal than ours. There is little free composition of the kind we have in our schools; it is more often an essay on a fixed theme with a planned outline, related to literary criticism or to a literary work being taken in class. The Russian language is logical and in order to write it correctly it is necessary to study its grammar thoroughly, even to the correct placing of commas. The study of literature is also systematic, and includes not only a detailed syllabus of Russian and Soviet writers and poets but of the great world classics and some moderns as well.

Each school works out its own way of organising practical work for the pupils of the top forms. The patron factory or machine-tractor station provides facilities for working for several hours a week, or for excursions to study the working of the whole plant. In Moscow several thousand pupils help on building sites, and have the satisfaction, in addition to learning certain skills, of feeling that they have helped to lessen the housing shortage. In the country pupils work in the dairies, help with cattle breeding or learn to manage farm machinery as well as to service them.

Many town schools organise harvest camps, and the older pupils help to harvest grain, fruit and vegetables, or carry out some of the regular duties with poultry or cattle. During the school year children from the fifth form upwards carry out tree-planting projects, both around their schools and along the streets. In the villages they help to lay out gardens and parks and undertake to care for the flowers and trees that they have planted.

Some schools in the Ukraine have introduced specialist courses into the curriculum. These include commercial as well as technical subjects.

In the last year or two there have been a number of strong exchanges between doctors and educationalists, both at conferences and in the press, about the overloading of school-children, especially with homework. Recently a leading article in *Pravda* stated that the load must be lightened, and the Ministry and the Academy of Pedagogical Sciences have been studying the situation. The matter has not been finally cleared up yet, and some of the cuts in syllabuses have not satisfied the teachers. As the result of polytechnisation, that is, the introduction of technical and practical work into the curriculum, other

subjects have inevitably had to be cut. The humanities in general and the literature syllabus in particular have been reduced. Many literature teachers, who said that they had not been adequately consulted, have objected to the way this was done. As is natural, and as in all countries, specialist teachers consider their own subjects to be the most important.

Text books have been re-written and a great deal of unnecessary detail cut out; the teachers' newspaper (which comes out three times a week) carried articles insisting that no homework should be set from these books unless the material has been thoroughly mastered in class—in other words the homework set should really be consolidation and recapitulation. The paper said that some teachers are giving the children new matter to read up because they have not planned their lessons properly, and so have got behind with the syllabus.

Soviet teachers are expected to make detailed plans of their lessons and they are checked by the head or the deputy. The head must, as part of his work, visit all teachers' lessons regularly, and discuss the lesson with the teachers afterwards. This work is shared with the deputy, who may not teach for more than two periods a day. In a large school or a school with two shifts there are two deputies. A young teacher just out of college is usually attached to an experienced one, who helps him to prepare his lessons and may even sit in at his lessons at first to see that he is on the right lines.

Visual aids are considered an essential part of teaching. A lesson on plants or grain must be illustrated by real plants and grain as well as by pictures. Films and film strips are widely used, and each subject has its own film library. One Moscow school has 200 geography films and

600 film strips and slides, and the biology equipment includes 50 films. Science laboratories are being equipped with automatic apparatus so that the teacher can use the projector for a few minutes of the lesson without interruption: a button by the blackboard is pressed and the projector at the back of the room begins to operate. At the end of the film the blackout is pulled back again by pressing the button and the lesson can proceed without the teacher moving from the front of the class.

The official visual aids supplied to the schools are supplemented by models and illustrative material made by the children in the after school circles. These include models and pictures of castles and other historic buildings, dioramas of primitive villages and early tools, coal mines, grain elevators and every kind of machine. The literary circles produce wall newspapers dedicated to various writers, recommend books, and celebrate centenaries of all famous literary figures.

Soviet teachers believe that one of the most important factors in the education of a child is parent-teacher co-operation, and that if this is working properly the child will study well and make good progress. To keep the parents informed of the child's school life each pupil has a diary in which he writes the homework set, and where the teacher enters his marks. There is room at the bottom of each page for the form teacher to comment, and the parent is required to sign each week and may also write a remark if he or she wishes.

It is claimed, and results justify the claim, that the curriculum of the Soviet school is well within the compass of any normal child, although naturally some children will master it more thoroughly than others. Soviet teachers are convinced that the child who fails, the exception rather

than the rule, does so not because he lacks innate ability, but because he has been ill, or because his home conditions may be bad, or because of some other outside factor. Streaming is looked upon as an inhuman method, and was rejected over twenty years ago.

Up to 1856, starting with the fourth form, transfer at the end of the year depended on passing annual examinations. Any pupil who did not pass in all the subjects examined was allowed to re-take the subjects in which he had failed at the end of the summer holidays, unless the teachers considered that the results showed clearly that his knowledge of the syllabus was so poor that he would be unable to follow the work of the next form. It was considered a sign of bad teaching if a school had more than a very few repeaters, and there were frequent articles in the educational press on the reasons for failures and the best way of preventing them.

There is no doubt that during the period of developing and building up a stable school system, these annual examinations served as a valuable check for the teachers on their work, and although they were possibly a strain on both pupils and teachers, they did play an important role in raising the level of teaching and learning. Now that a pattern has been well worked out, the abolition of examinations in all but the seventh and tenth forms will help to relieve the pupils and teachers of some of the strain, especially at a period when the school life is being extended and the curriculum adjusted to meet the needs of present day developments. The quality of teaching has been steadily rising as the pedagogical institutes have been able to supply enough fully qualified teachers to meet all demands.

As the seventh form is still a graduating form for a

considerable number of children, they take a leaving examination in Russian language (both written and oral), algebra with arithmetic (written), and in non-Russian schools there is a written examination in the native language. In the tenth form the subjects examined are: a written essay in literature and oral examinations in algebra, geometry, physics, chemistry, a foreign language and the history of the USSR. In all but the last the subject matter may come from the syllabuses of work in lower forms as well as the material covered in the tenth form.

The questions for oral examinations are published some weeks in advance by the Ministry of Education, and are available to pupils as well as teachers. Each oral examination is given on the basis of 'cards', and the Ministry booklet prints the questions in this form. The subject teacher copies each question on to a card; in algebra, for example, the printed booklet will have for card number one

(*a*) Newton's binomial theorem (proof).
(*b*) Problem or example.
(*c*) Sum and products of the roots of a quadratic equation in terms of the coefficients.

but the written copy of this 'card' which the pupil does not see until the actual time of the examination will, instead of (*b*) as above, have an actual problem to be worked out, which has been made up by the teacher.

The pupils of the tenth form are examined by a commission consisting of five or six members: the head of the school, the teacher-examiner (the subject teacher), two or three colleagues who teach the same or allied subjects to the top forms or teachers from a higher institute or a representative from the local or regional education

authority, and a representative of the Ministry of Education. All members of the commission must be qualified at university level and be approved by the Ministry.

Examinations take place some days after the school breaks up for the summer, and usually about half the form is present at a time for the oral examinations. All the cards are lying face down on the table and a candidate picks one up. He is given ten or more minutes at a desk, where there is paper for notes, to prepare, and he may use the blackboard or any appropriate visual aids when giving his answer. In chemistry or physics he may be asked to prepare and carry out an experiment. If he feels he simply cannot answer the first question he has drawn he may have a second one, but he receives a lower mark. Members of the commission may ask supplementary questions. Each member of the commission marks the candidate independently out of a total of five and at the end there is a discussion of marks, and a decision made. Results are made known the same or the next day.

A gold medal is awarded to a pupil who obtains five marks in each subject and a silver one to a pupil with five marks on the majority of subjects and four marks in the others. Gold medal winners may enter the university or a higher institute without further examination.[1] Otherwise there is a highly competitive entrance examination.

The Soviet Union is now faced with an interesting social problem. Formerly, when only a small proportion of children stayed on at school after the age of 15 years, they did so with the intention of going on to higher education. Now that all children will stay on at school until 17 years, the majority of them will not be able to go direct to higher institutes although a large number of

[1] This rule is now under review.

them will obviously wish to do so. In order to meet this problem the curriculum has been given a 'polytechnical' bias, which gives the basis for working in industry after a short specialist training of a year and, to encourage school leavers to take on jobs more readily, an easier entry to the university or to higher institutes has been introduced for young people who have worked two years in industry or agriculture. They take the same entrance examinations but are given preference even if they reach a slightly lower standard. There are arguments both for and against such a system, and time will show the advantages and disadvantages. But something had to be done in a new situation, and it will be interesting to see results.

5

The Pioneer and Komsomol Organisations

THE PIONEER ORGANISATION is for children between the ages of 9 and 14 years. It is based on the school, where its function is closely linked with the pupils' committees of the school or it is run by factory or other Komsomol groups. The Komsomol is the youth organisation of the Soviet Union and branches are formed in schools where there are pupils over 14 years of age.

Every secondary school has a full time Pioneer organiser on the staff; sometimes this organiser teaches a few periods a week in addition (this is paid extra). The Pioneer organiser is usually a young man or woman who takes on the job while studying in the evenings to be a teacher, or while waiting to enter a day institute or the university.

Young people may join the Komsomol from the age of 14, and in the school they are mainly responsible for running the Pioneers. The Pioneer organiser is usually a member of the Komsomol too. Any applicant from the school who has a good work record and is active in the social life of the school community is accepted.

The members of the Komsomol organise various leisure-time occupations for themselves, they go to the theatre, have discussions and debates, and go out on visits and excursions to places of interest. They organise all kinds of holiday trips, hiking, mountain climbing, exploration of distant regions, sailing—there are no limits to their enterprise. They also take an active part in the self-governing bodies of the school, and take the lead in voluntary work for the community.

The whole problem of providing adequate leisure time pursuits for adolescents has arisen with the raising of the school age. The Pioneer clubs do not provide adequately for the need for lighter enjoyments such as jazz and dancing which young people want and it will be up to the Komsomol to find a solution. There has been a suggestion that separate clubs for older school children may be an answer.

When they reach the age of 9 the vast majority of Soviet school children join the Pioneer organisation. The younger children in the school are well aware of the Pioneers, and they eagerly await the time when they too will be members. They make their application towards the end of their second year and a Komsomol explains the rules, promises and symbols of the organisation to them.

Each form usually has a Pioneer detachment of its own under the leadership of a Komsomol from one of the top forms. The detachment is divided into units of ten Pioneers, and it has an elected committee of about half a dozen members. All the detachments of the school form a 'druzhina' (Druzhba means friendship) or troop, which elects a council of ten or twelve members.

The aims of the Pioneer organisation are to help its members to study well, to enjoy their leisure time in a positive way and to develop into socially minded citizens. From time to time the Komsomol organisation holds a special conference devoted to the aims of the Pioneers and the best way to run the organisation. At a recent one it was decided to broaden the functions of the Central Council. It must work in close contact with the school system, the trade unions, the committees responsible for physical culture and sport, and with voluntary organisations interested in work with children. The Council must get in

touch with Pioneer and other children's movements abroad. It is responsible, together with the Ministry of Education, for the running of out-of-school clubs and other establishments, working with local Pioneer organisations and allied bodies.

The Council, together with the central committee of the Komsomol, runs the paper *Pioneer Pravda* and the magazines *Pioneer Leader*, *Pioneer*, *Camp Fire*, *The Young Technician*, *The Young Naturalist* and *Mursilka*.

The promise and the rules were also revised at this conference and are as follows:

The promise: 'I, a young Pioneer of the Soviet Union, promise in the presence of my comrades to love my Soviet fatherland, to live and strive as our great Lenin showed us, as the Communist Party teaches us.'

The rules:

A Pioneer loves his native land and the Communist Party of the Soviet Union. He prepares himself to become a member of the Komsomol.

A Pioneer honours the memory of those who gave up their lives in the struggle for the freedom and prosperity of the Soviet fatherland.

A Pioneer is a friend to children all over the world.

A Pioneer studies diligently, is disciplined and polite.

A Pioneer loves work and takes care of common property.

A Pioneer is a good comrade, looks after small children and helps old people.

A Pioneer is courageous and is not afraid of difficulties.

A Pioneer speaks the truth and upholds the honour of his detachment.

A Pioneer becomes hardy, doing physical exercises every day.

A Pioneer likes nature, he looks after green spaces, useful birds and animals.

A Pioneer is an example to all other children.

The school Pioneers have regular meetings and activities, and have their own room in every school. Here the banners, musical instruments such as drums and trumpets, and all the paraphernalia for producing wall newspapers are kept. Here the committees meet to discuss hikes in the summer, and sing-songs round the camp fire or round an imitation one in the winter! The work of the troop is so interwoven with the activities of the school as a whole that it is difficult for a foreigner to see where the line of demarcation comes or if it exists at all. For example, many groupings in the school produce regular issues of wall newspapers, and in one form room there may be a paper produced by the form editorial committee and another by a group of Pioneers. There may be some children on both committees. It is extremely important that the Pioneer organiser works in close contact with form teachers and that he is on good terms with them . . . otherwise all sorts of complications can arise!

Pioneers who do not keep up a good standard of work and behaviour are discussed first by the unit, which is made up of a group of friends. If that is not effective the matter goes to the detachment committee, or, if necessary, to the troop council. As a last resort the member may be either temporarily suspended, or expelled from the organisation. But the whole aim of the organisation is to encourage and help rather than punish, and to see that its members pass their time in such an interesting

and pleasant way that they become better pupils as a result.

As a result of the decisions of the eighth plenum of the Komsomol organisation, the work of the Pioneer organisation is being broadened and extended. Pioneer detachments are being formed outside the school by factory Komsomol groups and by the management committees of blocks of flats. A wide variety of measures are being taken to make the activities of the organisation more interesting and more closely linked with life.

The city of Sverdlovsk has been one of the most active in carrying out these decisions. Hundreds of Komsomols have helped to organise new groups which spend time actually doing jobs in the factories or on building sites, planting bushes and flowers along new streets, or unite children with a common interest such as literature or exploring. In blocks of flats parents are drawn into this work, and some groups take special interest in looking after very small children ('Groups for the protection of small children') or in organising the playground provided by the management committee.

The Pioneer organisation is expected to educate its members in the best traditions of service to their country through useful and interesting activities and discussions.

There is a demand for the provision of out-of-school activities among school children between 7 and 9 years of age, before they enter the Pioneers. Formerly there was an official organisation of Octoberites for this age group, and it seems likely that it will be revived.

6

Out-of-School Activities

UNTIL THE AGE of 10 or 11 years, children are not encouraged to join after-school clubs, or circles, as they are called in the Soviet Union. After that there is a wide choice from all sorts of activities going on in the school building. The circles are organised by the school or by the Pioneer organisation according to the requests of the pupils themselves. They may be academic, artistic or technical and in theory a child may belong to two only but in point of fact very keen ones seem to get by with membership of more. They may work at a favourite subject, make maps, charts or models for history or geography; or carry out some piece of research into the history or geography of the neighbourhood. Young scientists make apparatus and carry out experiments in the chemistry, physics or biology labs; young biologists look after the plants and animals belonging to the school, keep records of their growth and development, or look after the school garden and carry out experiments in plant growing on the same lines as Soviet scientific institutions, sometimes even under their direct guidance.

Other circles include dancing, painting, modelling, literature, drama, foreign languages, chess, embroidery, gymnastics, athletics and games. They are run either voluntarily by teachers, older pupils, parents or workers from the patron factory, or are taught by paid professionals. The school budget includes funds for fees and equipment, but these are also provided by the parents' committee or the patron.

In school 157 in Leningrad there are forty-five circles attended by about 650 children—that is just over half the total number of pupils. There is a choir of 130 voices, eight history circles, eight chemistry circles, six metal and woodwork circles and many others in physics, photography, radio, cinema, biology and artistic pursuits. Teachers run the circles for the older pupils, who in their turn run them for the pupils from the fourth, fifth and sixth forms.

In school 167 in Leningrad (and this is typical of many schools in the Soviet Union) the pupils have installed their own broadcasting system and a pupil's committee broadcasts a programme each day during breaks. The themes vary from day to day, and are 'Literary News and Information', 'Art News', 'The World of Sport', 'Technical and Scientific News', a programme of classical music, and a weekly report on the general discipline of the school. The pupils in this school also organise several conferences a year on themes of topical interest.

The Vladimir Ilych school in the Moscow Region has a tractor which the technical circles take to pieces and put together again in the winter. In the spring they learn to drive one on the local farm fields. Over three quarters of the 590 pupils stay to take part in circles between 3 and 5 o'clock, and then many of them go home to other villages by the school buses.

In the first term of the school year 1854-1855, school 437 in Moscow had sixty circles working. The head organised an exhibition of their work, and there were about 600 exhibits made by about 500 children. By the end of the second term there was an exhibition of 1200 exhibits made by over 1100 children—almost the whole school—who had been so stimulated by the first exhibition that they

produced this remarkable result. The exhibition was visited by teachers and pupils from other schools and the result was a great development in the work of after school circles everywhere.

In this school 437, there are over twenty circles run by the older pupils for the younger ones: photography, radio, handwork, natural history, 'deft hands' (which includes mending school apparatus) are some of the many subjects covered. Their exhibition included a collection of grain, flowers, fruits and birds made by pupils of the fifth, sixth and seventh forms under the direction of a tenth-form boy; delicate astronomical models from wood, wire and plasticine by tenth-formers; aeroplane models made by third-form children under the direction of a sixth-form boy and collections of flora and animal photographs obtained by different groups on school journeys. Wireless sets, mathematical models, models of hydro-electric stations, various machines, the water and heating system of a house and many more exhibits showed how this kind of activity extends the children's knowledge of the work they have covered in lessons and links it with the everyday life and development of their country. Many of the models were made after visits to factories or farms.

Inter-school competitions are held not only in sports or games, but in mathematics, literature, choir singing, chess and scientific or other school subjects. Some of these competitions take the form of a quiz or the setting of a problem to be solved by a team or by individuals, and are judged by experts from the universities.

Most schools have 'deft hands' groups whose job it is to make and mend. They keep an eye on apparatus and see that it is in good order, mend books, maps and pictures, put up shelves and notice boards. They also learn to look

after themselves—sew on buttons, darn socks and mend things at home.

Circles go on after school hours, according to the school time-table. Schools with one shift have circles from 3 to 5 or 4 to 6 o'clock, others have them later, from 7 to 9 o'clock or in the mornings for children studying in the second shift.

As more and more schools go over to one shift, finishing lessons at the latest by 2.30 p.m., and workshops for wood and metal work are equipped for polytechnical studies, many more technical circles are being developed, and eventually all children will be able to study in the morning and attend circles in the afternoon.

Membership of circles is voluntary, and there are naturally children who prefer not to join any of them. Book-worms either go to a reading room in their locality or stay at home to read, boys often get up an impromptu game of football or a snowball fight, and a group of girls may go to the home of one of them for a pleasant gossip about clothes—children all the world over like the same kind of fun and games. But the circles cater for such wide interests that most boys and girls spend two or three periods during the week pursuing their favourite subject or hobby, and still have plenty of spare time left for individual interests.

Through their participation in some out-of-school activities children can discover their main interests and talents and are helped in this way to decide on their future careers.

Every large city and town has a network of 'Pioneer houses' and clubs which provide activities for children's leisure time. In Moscow each of the twenty-five districts has its Pioneer house, Leningrad has nineteen districts

with one in each, and the other towns work on a similar basis.

Pioneer houses or clubs are in large buildings specially built or adapted for the purpose. There are usually three sections: a technical side, including wood and metal workshops, rooms for aeroplane modelling, boat building and any other technical subject of interest to children; an artistic section with studios for dancing and art and music rooms; and rooms for relaxation and amusement.

The staff are full time and paid by the Ministry of Education, and include fully qualified technical instructors of art and music teachers. The head is often a former teacher.

The Pioneer houses cater for both regular and casual members. The regular members belong to circles and come two or three times a week. At the beginning of each school year the programme of circles and other activities is sent to each school in the district and the pupils may enrol in any circles they choose. The concerts, talks, dances, competitions and exhibitions are open to any child who wishes to attend, whether he is a regular member or not, and hundreds of children each year visit the Pioneer house in this way. Here, too, there is a large library and reading room, as well as a hall for dancing and an auditorium for plays and film shows.

Some cities, like Leningrad, Erevan and Tbilisi have a central Pioneer Palace. Moscow has a central Pioneer House surrounded by beautiful grounds and is building a Pioneer Palace. These central buildings serve the whole city and provide circles for thousands of children each week, as well as cultural amenities for still larger numbers.

The Pioneer Palace in Tbilisi (Georgia) was formerly a prince's palace and is attended by over 6000 children (out

of the total school population of 15,000) each week. There is a staff of 150, three quarters of whom are full time, and the rest part time, specialists. These include professors, artists, musicians, scientists, film directors and technicians. The annual budget of the Pioneer Palace is 3 million roubles.

In addition to laboratories (physics, chemistry and biology), workshops, history, geography, literature and foreign language rooms, there are art and music rooms, a gymnasium, a pioneer room, a large hall for parties and dancing, and an auditorium for drama and films. The library has 65,000 books in Georgian, Russian, English, French and German and about 500 children borrow books every day.

The history circles work on themes suggested by the children themselves. Each year all the history circles in Georgia hold a conference at which children read papers and exchange information. Some themes are archaeological and many circles study the history of Georgia in different centuries. Professors from the university help the children in their work, which is done in a real spirit of research.

The Leningrad Pioneer Palace was originally built by the Empress Catherine. It was organised in 1835 and all the furniture and equipment was supplied free by the museums and factories of Leningrad. There are 328 rooms in the palace, providing 760 circles for about 16,000 children a week. Each circle meets twice a week for two hours, out of school time. The work is divided into eight sections: technical, artistic, physical culture, nature, library and books, the study of the locality and travel, leisure time amusements and a section for teachers and Pioneer club workers who come for study and consultation.

Leisure time amusements include films, concerts, lectures, dances, excursions, meetings with famous writers, artists, explorers or actors, and facilities to sit and talk or read in ten beautiful drawing rooms.

The section of 'Fascinating Sciences' includes a planetarium, the geology room has a small museum attached; there are 14 circles of young people who learn dances and songs and then teach them in their own schools to other circles there; the story-telling rooms have their walls covered with pictures from fairy and folk tales. A large, soft carpet on the floor provides seating space for young children who come to listen to stories and legends told by people specially trained or by the authors themselves.

The technical wing has all kinds of workshops equipped by Leningrad factories. There are 200 technical circles working with a membership of 3000 children. Younger children work at fretwork or simpler wood-work, while older pupils go to the engineering and other work shops.

The artistic section of the palace has about seventy rooms and over 3000 children belong to circles here. There are two orchestras—one symphony orchestra and the other of folk instruments and a large choir. Hundreds of children learn to play musical instruments of all kinds. The puppetry circles have, in addition to their workshop, a little theatre where they give a performance every Sunday to their friends and their classes from school.

Parents are invited to come to the performances and exhibitions arranged by their children and also there are special meetings for parents where they can learn about the working of the Palace and its circles.

About two million children come to events such as concerts and dances, averaging two or three attendances a

year; Pioneer houses and school circles give performances in the halls here, and children from the Palace circles perform at the Pioneer houses and in the schools. This provides a constant interchange of ideas and experiences.

All trade unions have clubs for their members, often attached to the factories where they work. Most clubs have a section for children. One girl, for example, who lives in Leningrad, and whose father works in the telegraph office, goes regularly to circles run for school children by the club belonging to workers in communications. She is 16 years old and is determined to study all types of communication before she makes up her mind about a job on leaving school. She is at present studying radio, and she also goes two evenings a week to the Pioneer Palace, once to a dance and the other evening she sings in the choir.

In the villages the collective farm clubs often organise activities for the children—social evenings, film shows, dance and song groups. These are arranged in conjunction with the school, where most of the out-of-school activities take place . . . in fact, the school is one of the cultural centres of the village.

Blocks of flats in the towns sometimes allocate one flat to be used as a children's club. This is supervised by the house committee, which provides the furniture and equipment. This committee also makes provision in the grounds around the building for a volley-ball pitch and a space for kicking a football around where there will be no damage to windows. This kind of provision largely depends on the initiative and interest of the parents living in the flats.

In addition to sports stadiums for children, the adult sports societies have junior sections where children can train under the supervision of experts in athletics or can play games. In the winter, parks have special skating rinks

for children, as well as ski centres where all equipment can be borrowed free of charge. Every member of a children's skating club is provided free with a pair of skates, and as the boys and girls pass from one category to another by means of tests, they are given a better make of skates. In the summer keen skaters continue to keep in training by rowing or cycling, so that they are fit to continue as soon as the ice is good enough.

There is tremendous enthusiasm for sport of every kind in the Soviet Union, and any youngster who shows promise in the sports clubs or in the many athletics meetings for school children is given every help and encouragement to become a champion.

Soviet educationalists believe that out-of-school activities are as important an aspect of the educational system as lessons in school time. They provide any child who wishes with the possibility of pursuing his hobbies, and so help him to spend his leisure in a happy and positive way. Children who have absorbing interests are less likely to become delinquents and are more likely to know what they want to do when they grow up. They are also acquiring the habit of organising their leisure time, and are likely to want to continue their hobbies when they grow up. Music, drama, foreign languages, technical subjects, art and literature can be followed by adults in their clubs, and the thousands of young people who have a taste for sport can transfer to adult clubs when they leave school.

Biological centres exist to help children who are especially interested in experiments with plants. The centre in Kiev which is one of 169 in the USSR is situated in a large park and is staffed by trained gardeners and biologists. Schools send groups of children regularly to work on plots here, and on Sundays over a thousand

children come. Every summer there are camps of young Michurinites to carry on the work. There are indoor study rooms dealing with grain, fruit, vegetables and animals. There are poultry houses, a rabbit house, a tree nursery and a hot house with grape vines. New kinds of tomatoes, apple trees that grow along the ground, new kinds of vegetables are grown, and records kept.

There are twenty-six children's railways in the Soviet Union. One of these is near Kratovo, in the pine forest outside Moscow. The engine is a real, though a small, one, not a 'toy' or a miniature, there are three coaches each seating thirty-two, and the track runs through the forest, stopping at two stations and a halt. It works during the summer holidays, and takes anyone as passenger. The fare is 1 rouble for adults and 50 kopecks for a child. The station, booking office, signal box, level crossing and platforms are manned entirely by children, boys and girls, who also act as conductors on the train (one to each coach, as on ordinary trains in the Soviet Union). There are two drivers for the train and the only adult in the whole team rides in the cab with the drivers. All wear uniform. In the winter these children study in 'railway' circles at their schools. They take it in turns to work on the railway, spending about three half days a week there in the holidays. Although all the children come because they are interested in trains, they do not necessarily take up this work when they leave school.

Most of the cities have children's theatres both for straight plays and for puppets. These theatres often have more than one team of actors, so that one group can go on tour to those places where there is no permanent company. In Moscow the 'Theatre of the Young Spectator' specialises in plays for the older teenager, and keeps in

close touch with its audiences by means of discussions on current productions, a lively correspondence, and visits to schools. The other children's theatres put on plays for specific age groups, and children are not allowed to go to plays for those in groups older than themselves. Grown-ups are only allowed in if accompanied by a child, and only a limited number of adults are allowed in to each performance. Puppet theatres are a feature of child entertainment in the Soviet Union. There are over 100 theatres for children in the USSR.

Cinemas put on special films for children during the holidays, and in general no children under 14 years of age are allowed in to the performance after 5 o'clock, when what would be called 'A' films are shown. There are no 'X' or 'H' films in the USSR.

7

Holidays

SUMMER CAMPS in the Soviet Union are organised on a scale similar to that in the United States. They are an important part of the summer holiday of the vast majority of town children, who go to them for at least six weeks out of the three months. Formerly these camps were run by the school Pioneer organisation, but now they are more often under the auspices of the trade union committee of a factory or other large enterprise.

The camps are on permanent sites with proper buildings and facilities for wet weather pursuits. The dormitories are spread among a number of single story chalets, and other buildings provide dining accommodation, club rooms, a hall with a stage, an isolation ward next to the camp doctor's quarters. They are usually situated on the bank of a river, in a forest or by the sea.

One of the camps, belonging to the Ministry of Higher Education, is in the country about forty miles from Moscow in the district called 'Little Switzerland'. It is on a hill in a clearing in the forest, and is within reach of the Moscow river. The territory is large, and has several volley-ball pitches, an athletics training ground, and a large plot for experimental gardening. The flower beds are looked after by the children. There is a flag pol. with a small platform at its base, and an open space around it for the roll call morning and evening, the hoisting of the flag, and any other meeting.

The camp takes 400 children at a time, and each group comes for six weeks. The children are from the families of

people who work for the Ministry—cleaners, secretaries, lecturers, professors, inspectors or heads of departments. The children are brought to camp by special buses and are put into groups of ten according to age and with their friends, if they so wish. Although the camp is run by the Pioneer organisation, non-Pioneers are never refused a place. There are also children of pre-Pioneer age. Each unit of ten has a Komsomol in charge, and is given a place in the hollow square on the assembly ground.

The health of the camp is looked after by a staff of two doctors and three nurses. They weigh the children regularly, keep an eye on their diet, see that they have the right amount of sun and sun-bathing, swimming and exercise. One of them usually goes on the long hikes to ensure that no one is overtaxed, and to give first aid if necessary.

The camp routine, like that of all camps in the Soviet Union, fits in with the aims of building up the children's health and giving them an enjoyable time. It is also based on the general educational aims of Soviet schools—that is to give as much responsibility for running their affairs to the children as possible without making it a burden. At about 8 a.m. the camp is awakened by the camp bugler and every one is out for physical exercises, followed by showers. Each day units are on duty at the camp and are responsible for helping to clear the tables after meals. They sound the bugle for meals and other occasions, see that the place is clean and tidy, the flowers watered, and in general that everything is in order.

The daily programme includes sun-bathing and a swim in the river and 1½ hours' sleep in bed after the mid-day meal. Everyone from the youngest to the oldest of 17 years is expected to sleep at this time, and in a few days the habit is formed and all benefit from it. Meal and bed

times are fixed, and for the rest of the day there are all sorts of activities to choose from or to ignore, according to taste. Some children pursue their own interests and like to sit on a quiet spot to read or sketch or chat. Others prefer to make aeroplane models, collect leaves or flowers, take photographs, bird-watch or make plans and maps of the district. Groups prepare plays, dances or songs for evening entertainments. The 'journalists' run the camp newspapers and young agriculturists work in the garden. The parents are always given an entertainment when it is visiting day.

The staff of this camp numbers fifty-eight adults, including twelve teachers and students from training colleges and six specialists to run circles in modelling, photography, painting and choir. The twelve Pioneer organisers run the camp together with the director (a retired headmaster). The two accordionists are important as they play for morning exercises and for all kinds of dancing and singing. Every day a number of excursions or walks are organised in the neighbourhood, so that there is an added opportunity of going out of the territory of the camp either with the aim of collecting specimens or information, or of picking berries to eat, or just for the enjoyment of a pleasant walk.

In some camps there are special times when the teachers give coaching to pupils who have fallen behind with their school work.

Camps like the Artek, in the Crimea, are dreamed of by every Soviet schoolchild, and a pass to go there in the summer is usually obtained on the recommendation of the school by good all-round pupils. This camp is built up the slope of a mountain, and has its own beach and harbour. All the things that a child could wish to do on his holidays are possible there, and hundreds can be accom-

modated each year. Artek also invites children from other countries on visits, and they have given hospitality to many, including British guests.

At many health resorts by the sea and in the mountains there are holiday homes for children. Some of them exist solely to build up the health of delicate children, but many of them cater for children who come to spend a holiday there without their parents. It is a common sight at a resort like Anapa on the Azov coast to see whole sections of the beach reserved for children's holiday homes, and to see the children enjoying themselves on the sand or in the water under the supervision of the staff.

School journeys are becoming a feature in Soviet schools. These are often arranged by the leaders of after-school circles in connection with the work done in them. Geography, archaeology, biology, botany may be the aim of a journey, or young people may go off on a training trip for mountain climbing or exploration in the desert. Often groups go off on ski-ing trips in the winter holidays, and on camping trips under canvas in the summer. There are many tourist centres for young people and organisations which help to arrange all sorts of journeys at cheap rates. Another favourite way of travelling is to charter a river boat and travel for some weeks along one of the many big rivers of the Soviet Union.

Large numbers of Soviet children go away with their parents for part of the summer just like children everywhere, but no parents have as long holidays as their children, so they like to send them away during the hot period either to camp or to stay with relations in the country. It is remarked by foreign visitors to the Soviet Union in the summer months that there are remarkably few children to be seen in the cities.

8

Rewards and Punishments

THE EDUCATIONAL EXPERIENCES and theories of A. S. Makarenko have had, and still have, a profound influence on Soviet education. His ideas on 'the collective' and discipline in human relations form the basis of Soviet educational practice today.

Makarenko discovered while still a student the important principle of 'how to combine the most exacting demands on the pupil with the utmost respect for his personality'. He began to develop his educational theories when he worked with delinquents in the early years of the revolution, and his experiences with them convinced him that the important basis of all educational work is 'the collective'. 'Education is by the collective, through the collective and for the collective.'

It was as head of the Dzerzhinsky Commune 1828–35 that he developed his principle of combining study at school with productive labour, of uniting mental, physical, moral and aesthetic education. He believed that educational methods are determined by educational goals and change as society changes. His whole outlook was permeated by confidence in man's vast potentialities and in the creative powers of people organised in a collective. He used a new kind of discipline—'the discipline of combating and surmounting difficulties', and he believed in 'perspective'. 'Man must have something joyful ahead of him to live for. The true stimulus of human life is tomorrow's joy. In educational technique this not-too-

distant joy is one of the most important objectives to be worked for. In the first place the joy itself has to be organised, brought to life and converted into a possibility. Next, primitive sources of satisfaction must be steadily converted into more complex and humanly significant joys . . . to educate a man is to furnish him with the perspective leading to the morrow's joy.' . . . 'When properly applied by the educator, the system of perspectives keeps the collective in a buoyant happy mood; holds a clear-cut purpose before the children; strengthens their confidence in their own powers and spurs them on to ever greater achievements.'

'New perspectives must be organised, the existing ones must be fully utilised, and worthier ones must be gradually introduced. A beginning can be made with a good meal, a visit to a circus, or cleaning out the pond, but perspectives affecting the whole collective must be created, gradually widened, and brought to the point where they become the perspectives of the Soviet Union itself.'

'Style and tone are among the most important qualities in collective education. Style is a delicate and perishable quality, it needs constant care. It cannot be built up rapidly since it is unthinkable without the accumulation of tradition, of conceptions and habits accepted consciously, and of respect for the experience of older generations.' (*The Road to Life.* Makarenko.)

'We demand from the Soviet citizen not only that he understands why he should carry out an order, but that he should carry it out to the best of his ability. And that is not all. We expect him to be ready at any moment to carry out his duty on his own initiative and with his creative will without waiting for an order. We hope that he will do only that which is useful and necessary for our society, and will

not be put off by unpleasantness or difficulties. On the other hand, we also expect a Soviet person to refrain from doing something which, although it may give him pleasure, may be harmful to people or society. We expect our citizens not to limit themselves to the narrow circle of their own personal affairs, their garden, their bench, their family, but to take an interest in the people round them, their lives and behaviour, and to come to their aid when needed, even at a sacrifice to themselves.

'It is obvious that this kind of disciplined person cannot be educated through one thing alone—practising how to obey. A disciplined Soviet citizen can only be educated by a combination of correct influences among which the most important are: a broad political education, a general education, books, newspapers, work, social activity and also, what may seem of secondary importance, games, relaxation, amusement. Only a combination of all these influences can provide the correct education and only as a result of it does a real disciplined citizen of socialist society emerge . . . discipline does not come as the result of separate disciplinary measures, but from the whole system of education, the whole environment, all the influences which are brought to bear on the child. Discipline is not the reason, the method or the means of correct education but the result of it. Proper discipline is the good result aimed at by the educator, with all his skill and all the means at his disposal.' (*Radio Talks to Parents.* Makarenko.)

A good example of how the theories of Makarenko are being put into practice is the experience of the headmaster of a boys' school at the time of the return to co-education. In the June before the re-organisation he invited the older girls who would be coming to him in September to a meeting with his older boys. They came and he explained

that he wanted their help in making the transition smooth. He asked them to bring their suggestions to a further meeting the following week. No one turned up, and he thought very hard as to the possible reason for this. He came to the conclusion that he had used quite the wrong approach, and this time he sent out an invitation to a dozen of the same girls to join him and a group of his boys for a week's hike in the country. The invitation was accepted, and during the trip everyone became very friendly, and naturally looked forward to being together in the same school in the autumn. His aim was achieved in a positive way.

The development of a 'collective' in a Soviet school depends greatly on the form teacher. The children start as a new group in the first form, and as they stay together (with very few exceptions) all their school life, the social unit can become well knit, given the right guidance.

At first the children are expected to do small jobs in the class rooms, being monitors in turns, looking after plants, airing the room, and having as much responsibility as small children can take. As they move up towards the fourth form and their horizons widen, they begin to be active outside their class room. They join the Pioneer organisation, and take part in meetings of the unit, where their work and progress are discussed; they attend form meetings where the general discipline of the form and its reputation are considered the affair of every member; they are encouraged to make suggestions for improving discipline or for arranging social activities, and begin to realise their personal responsibility for the good name of their collective—the form.

From the fifth form onwards the regular form meeting is used as the means of maintaining good behaviour and a

good standard of work. The form committee, elected by the form itself, runs these meetings, with the active help of the form teacher. The form also elects an editorial board for its wall newspaper, and any other committee necessary. In the sixth form of one school, seventeen members out of the total of thirty-nine were members of various committees, including those of the Pioneer detachment. At regular intervals the form discusses the general standard of work done by its members and deals with anyone getting low marks. In the case of bad behaviour, in or out of class, the offender is expected to give an explanation and, if it is necessary to make amends, he is given a chance to show his intentions by the next meeting. If, on the other hand, he appears not to understand that he has done anything wrong, a decision may be taken to ask the form teacher to see his parents, either at school or at their home. If this proves useless in getting the boy or girl to realise the need to do better, the head of the school is brought into the discussions. As a last resort, the pupil may be expelled from the school, but only with the agreement of the local education authority, which must decide what happens to the pupil.

A boy was expelled from a Leningrad school for a year, with the understanding that he could come back then if he had a good record of work and conduct. It was felt in his case that being deprived of the life of the collective, which he had shared for five years, might be a salutary experience for him. He had been very lazy in his work, inattentive in lessons and badly behaved in general, and the school which accepted him was given all this information before he was transferred. After three months the boy came back to his old headmaster and begged to be taken back into his old form. He said that he had learnt his lesson and he wanted

to be with his own friends whom he missed very much. The head said he would talk to his present form teacher and if he gave a good report and the new school was willing he could come back. The boy came back and did well; his form mates were pleased to have him back, and no more complaints had to be made of his attitude or behaviour.

One of the aims of a form teacher is to see that the children are brought into contact with people outside the school. A school troop of Pioneers were out on a ski-ing expedition during the winter holidays and in the woods they came across a large house. Their leader went up to the door to ask if the children could have water to drink, and found that they had come to an orphanage, or, as the Russians call it, a children's home. The matron invited them in, and the young visitors began to make friends with the little children, all under school age. As an outcome of their visit the Pioneers adopted this home, making toys for the children, visiting them, doing all sorts of things for them, and developing a sense of responsibility for them.

Many schools adopt ships and send letters, books and news to the crews, who in return take a personal interest in the marks, discipline and activities of the children. When they are on leave they make it a regular occasion to visit their friends at school and tell them all their adventures.

All such activities help to keep children in a 'buoyant mood' and help them to be keen on their work, interested in what goes on around them and of course, as a result, to be well behaved.

Corporal punishment is against the law, and the whole question of punishment is connected with the general one of discipline. Makarenko believed that only children who were self-disciplined, and good members of the collective,

could take severe punishment and benefit from it. He did not punish new and undisciplined members of his community, although they were always brought before the committee and were expected to take part in or at least listen to a discussion of their actions. Often the very fact that they were not officially punished had a strong effect on them, especially when there was a good tradition and a well-developed public opinion in the community or collective. Professor Novikov, for many years a headmaster and now a member of the Academy of Pedagogical Sciences, has this to say about punishment: 'Of course it would be unrealistic to imagine that in training children one can get along entirely without disciplinary measures, with persuasion and explanation alone. Punishment is necessary sometimes. But in the first place it should not be resorted to without real need, and secondly—and this is quite as important—it must make sense. It should not give the child cause to feel wronged and resentful, nor the morbid gratification of thinking "Well, I did something to you, now you have done something to me, so we're quits". The object of punishment, as we Soviet teachers understand it, is to make the child think over his offence, realise that he did wrong and not do the same thing again. You haven't done your homework?—do it in school under the teacher's supervision. You have made a mess?—clear it up. You have broken something?—mend it. You've done your schoolmate an injury?—apologise before everybody.

'The Komsomol organisation, the pupils' council and school public opinion generally are a great help in building up discipline . . . hardly ever was there a case in my school of a pupil letting his classmates down, when, after duly taking him to task, they collectively vouched for his good

behaviour in the future. . . . The discussion of a pupil's conduct at a meeting is a real event both in his life and that of his fellows.

'We attached great importance to having the right kind of public opinion in the school and gave the school press every assistance and guidance. Our press was a genuine mouthpiece of the student body. Over one hundred senior pupils took turns in putting out the papers and there were several times that number of contributors. In the articles children who had not been working or behaving properly were hauled over the coals and quite often they themselves wrote undertakings to do better in the future.'

Every Soviet school has a pupils' committee of between seven and fifteen members, according to the size of the school. The committee is elected annually by all the pupils from the fifth form upwards at a general meeting at which the head is present. The chair is taken by the chairman of the last year's committee. The committee chooses its own officers, and all its work is done under the direction of the head. Its functions include helping the head and staff to maintain a good standard of study and behaviour in the school; giving a lead to the form chairmen and helping them in their work; organising monitors from among the older pupils to help the staff on duty; editing and producing the school wall-newspapers and information sheets; encouraging pupils to take part in social, sporting and athletic activities; providing groups and individuals with jobs for improving the school and seeing that pupils are not overburdened with duties both in and out of school.

The committee, with the agreement of the head, can call a general meeting of pupils of parallel forms, or of the fifth to tenth forms, to discuss some specific school matter, and in cases of bad behaviour reported by a monitor on

duty the committee may ask the offender to attend one of its meetings.

In many schools the committee appoints a different form to be on duty each week (usually forms 7, 8, 9 or 10) and the report of each form is either broadcast over the school network, or published in the school newspaper. In this way the whole school knows which forms and children co-operate, and who are the disturbers.

The following lists of duties were hanging in the corridor of school 157 in Leningrad:

THE DUTIES OF A FORM CHAIRMAN (*forms* 5 *to* 10)

1. To help the teacher to create a good social attitude in the form.
2. To help the teacher to arrange activities for the form.
3. To help the teacher to achieve a high level of study and discipline in the form.
4. To organise form monitors.
5. To see that the form room is clean and in good order.
6. To allocate various duties to members of the form.
7. To participate in the social activities of the form.
8. To run the form meetings with the help of the form teacher.
9. To see that the room is emptied at break times.
10. To check on lateness and absence and collect the absence notes.
11. To take the late and absence list to the school office daily.
12. To work in co-operation with the Pioneer and Komsomol organisations.

THE DUTIES OF FORM MONITORS

Monitors in forms 1 *to* 4 *are appointed by the form teachers and those in forms* 5 *to* 10 *by the form chairmen.*

1. Monitors come to school half an hour early and see that the form room is in order, that ink, chalk and other requirements are in the right places and that the room is properly ventilated. They report to the teacher on his arrival.
2. At the end of each lesson one monitor sees that all the children leave the classroom and the other airs the room and prepares it for the next lesson. They lock the room when they have finished.
3. Monitors' duties finish when the form goes home after lessons and they hand over to the cleaners.

Each school makes its own rules, and monitors' duties may vary, but all rules are based on the principle of encouraging the children to run their own affairs as much as possible and of helping them to become socially minded towards their school.

When a child starts school he is given a schoolchild's card which serves as a kind of pass (to a public library, for example), and on which is printed what is, in effect, a code of behaviour in the form of a list of rules. These are the rules:

Each pupil should

1. Steadily and persistently acquire knowledge in order to become an educated and cultured citizen and to be as useful as possible to his native land.
2. Study diligently, come punctually to lessons, be on time at school.
3. Obey at once the orders of the head of the school and the teachers.
4. Come to school with all the necessary text books and writing materials.
5. Be ready for the teacher when he comes in.

6. Come to school clean, tidy and neatly dressed.
7. Keep his place in the class room neat and tidy.
8. Take his place in the class room immediately the bell rings, and only leave it during the lesson with the teacher's permission.
9. During the lesson sit straight, listen attentively to the teacher's explanations and the pupils' answers. He should not chatter nor carry on anything unrelated to the lesson.
10. When the head or the teacher enters or leaves the class room, stand up.
11. When answering a teacher stand up straight and not sit until given permission. If he wishes to ask or answer a question, he should put up his hand.
12. Write carefully in his diary or special exercise book the homework set and show it to his parents. Do all homework on his own.
13. Show respect to the head of the school and the teachers. If he meets them in the street he should greet them politely, boys raising their caps.
14. Be polite to those older than himself, be modest and well behaved at school, in the street and in public places.
15. Not use bad language, smoke nor gamble.
16. Take care of school property. Take care of his own and his comrades' belongings.
17. Be attentive and courteous to old people, to little children, to weak or sick people; let them go first, give up his seat to them and help in every way.
18. Obey his parents, help them and take care of little brothers and sisters.
19. Keep the rooms at home clean, keep his clothes, shoes and bed in order.

20. Take great care of his school card and keep it with him.
21. Value the honour of his school and his form as highly as his own.

In most Soviet schools one sees in the corridors mounted photographs of all the pupils who have excellent marks. This is one of the ways of encouraging good work. It is never a question of rewarding the best individual, but of all children reaching a good standard. There are no place lists for tests or examinations, all of which are marked out of five; praise is given to all those who receive good marks, or who have raised the standard of their marks, and in the case of really good effort the head may give the results out at an assembly of pupils. If an individual award is made in the form of a free pass to the famous Artek camp in the Crimea or to some other summer resort, it is given to a pupil who has contributed to the school life through public spirit and social work and not merely for achievement in studies.

Up to 1944 a form of socialist emulation was used in Soviet schools as a means of raising the standards of study and behaviour. Forms competed with each other to get high marks and good reports on discipline and teachers undertook to have no failing pupils in their classes. Results were checked regularly and put up on notice boards. Forms with the best results received a pennant for the month, and schools challenged each other in a similar way. This system had its positive side but there were dangers in it too. The slower pupils, who were perhaps incapable of reaching a higher standard in their work than a mark of 3, would feel that they were letting the form down, and teachers who tried their very best to help all their pupils still could

not really be blamed if one or two of them failed for perfectly valid human reasons. And so in 1844 it was decided to stop all form of emulation (we would call it team competition in England) in the school system.

In the last few years the question of emulation has come up again for discussion in the Soviet educational press, and is again being used in the schools in quite a different form.

In an article in *Soviet Pedagogy* of January 1858, some interesting examples are given and a plea is made for a wider use of this method. The following examples are from the experience of a number of schools in Yaroslavl, and were largely carried out through the Pioneer organisation. In every case the aim was to give the children the chance of doing things for themselves which would improve their knowledge of school subjects in an interesting way and at the same time contribute to the life of the community.

Schools 36 and 43 in Yaroslavl decided to do something for the Youth Festival, and organised a relay competition between Pioneer units in all forms. Each unit received a packet in which the activities for the first stage of the relay were listed. Each unit had to choose one of the countries involved in the festival and study its customs and culture; start a correspondence with children in that country; prepare some presents for the festival; learn how to behave in a cultured way; learn two songs; involve every member of the unit in the work. When this was completed the second part of the relay was: to organise an evening devoted to the chosen country to which other units were invited; to organise an exhibition or a broadcast on the chosen country; to prepare songs and dances; to choose some job useful to the community and carry it out. The third lap of the relay was: to do something for the school; to organise an

exhibition of reproductions of well known artists; to have a sports meeting with other units; to organise an evening about their native land. The final lap was: to organise an amusing get-together (riddles, jokes, puzzles); an exhibition of the presents made for the Youth Festival; make a study of the town and its history over the last forty years; enter for a competition in honour of the fortieth anniversary of the Soviet Union. This relay competition enlivened both the schools involved and led to many interesting events and exhibitions.

In other schools in this town the competitions took a variety of forms and in all of them the school broadcasting system was used to keep everyone posted with the results, telling of the interesting things being done and which units were at the head of each stage. Quizzes were organised on a wide variety of school subjects, the units being told in advance what the topics would be, and they competed to see which had the best knowledge of literature, mathematics, physics, history, geography and other subjects. In one or two schools the units competed to see which gained the highest number of improved marks, and three schools had a competition for the best story, verses, models, drawing or musical composition—in this case individual interests could be combined to make an interesting group entry.

Everything went to prove that in the schools where such activities were taking place, helped and encouraged by the teachers and Pioneer organisers, the general standard of work and discipline went up steadily, and the importance of continuing to find fresh scope for the pupils' initiative and of checking their progress regularly, is now widely recognised. This is, in fact, another aspect of the methods advocated by Makarenko.

9

Special Schools

THERE ARE SPECIAL SCHOOLS in the Soviet Union for physically handicapped children, for mentally retarded children, for those with exceptional talents for art, music or ballet, and for deprived and delicate children.

The schools for partially or wholly blind and deaf children aim at giving them a normal education as well as special training according to their disabilities. Classes are small, from twelve to fifteen children, and special medical and treatment rooms train the pupils to speak, lip-read, use hearing aids, and in general to adapt themselves to lead as near normal lives as possible. The period of schooling is extended to eleven or twelve years, according to the type of defect—partially-sighted children, for example, have eleven years in which to cover the curriculum of the ten-year school, while the deaf cover the work in twelve years. Most of these schools are for day pupils, with hostels attached for those living at a distance. Professional or vocational training is introduced into the curriculum of the totally deaf and blind at the age of twelve, but a number of pupils from these schools go on to the university and enter the higher specialist schools.

All teachers at these schools receive a special training and are paid twenty-five per cent above the usual salary.

School 337 in Moscow is for the partially deaf, and has 630 boys and girls in fifty-three forms. It works in two shifts until a new building, which is in course of construction, takes off half the pupils. There is a hostel for children who live in the country. There are ninety teachers and

about thirty non-teaching staff. Teachers for this type of school receive a five-year training in the faculty of defectology at the Lenin Pedagogical Institute.

The school has a whole wing devoted to medical and other treatment; rooms for developing speech, testing hearing progress, and various forms of physio-therapy. Some of the class rooms are equipped with hearing aids and lessons are carried on by this means. In other rooms, such as the laboratory, for example, lessons are followed by lip reading. The school hall is equipped with hearing aids. To the ordinary visitor walking around the building during recreation time, it is heartening to see the children running round, talking and laughing together like any normal children.

Soviet educationalists maintain that unless a child has a brain defect, or some disease of or affecting the brain, he is perfectly capable of following the curriculum at an ordinary school. And so a child is usually only admitted to a special school for the mentally retarded at the age of 8 years (a year after entering normal school).

It must be established as the result of a long and careful examination by a commission that the child cannot follow the normal curriculum because of a brain defect or disease. The usual procedure is for the child's teacher during his first year at school to report to the school doctor that he is unable to master the elements of reading or of numbers, and appears not to be able to follow the simplest explanation. The doctor calls in the parents and after discussions between the parents, teacher and doctor, who makes a thorough medical examination of the child, a full report is made to the head of the school, and a commission is appointed to examine the case. The commission must include the head of a special school, the

children's doctor, a psychiatrist and the child's own teacher. The decisions of the commission are only valid if the psychiatrist is in agreement.

It may be established during the course of observation and examination of the child that he is backward due to very poor health, and in this case he may be sent for a period to a 'sanatorium' school, where he continues his lessons while his physical disability is being cured; or he may be an emotionally disturbed child, and be sent for treatment to a clinic while continuing at his school, or, if the condition is a bad one, he may be sent to a special boarding school for a time for treatment. If, on the other hand, it is established that the child is defective, he is sent to a special school, usually as a boarder.

The number of children in a class in schools for mentally retarded children must not exceed sixteen, and a school must not be larger than 200 pupils. The curriculum of the school is that of the first four years of a normal school and is covered in seven years. A few schools are trying the experiment of going beyond the normal four-year course; some are even attempting to do the seven-year curriculum in twelve or more years. If the head of the school finds it necessary he may organise a separate class for extremely backward pupils with a maximum of twelve children. Vocational training in the school workshops and the garden is begun at the age of 12 and is separate for boys and girls. Teachers in these schools either have been trained in a department of defectology at a training college, or have at least five years' teaching experience in ordinary schools. The medical staff includes a psychiatrist or neuropathologist and a nurse, as well as a speech therapist. In addition there are instructors in vocational subjects, as the aim of the school is to give the pupils enough mastery of a

trade to enable them to enter industry or agriculture as at least semi-skilled workers.

It is claimed that about ninety per cent of pupils from these schools enter industry or agriculture, and the rest live and work in special colonies where there are workshops of a type suitable to their limited capacities.

Teachers in these schools also receive twenty-five per cent above the normal salary.

As a result of the war and the immediate difficult post-war period there is a number of adolescents who are behind with their work and who would therefore be in a form with pupils younger than themselves. There is also a limited number who are discipline problems for a variety of reasons. For such young people special schools have been opened, and the educational approach is based on Makarenko's work with young people. The normal curriculum is followed, with a bias on 'labour'. For example, in the town of Vladimir a school of this kind was recently opened and there were no workshops. The pupils themselves suggested that they should not wait for them to be built officially, but that the school itself should go ahead and build them; this was the result of meetings held by the headmaster with the children when he told them that their work at first would be hampered by this lack of workshops and how sorry he was. The whole school was caught up in the enthusiasm of planning and getting material. Helped by the local authority, the children divided themselves into brigades and in a month and a half had put up the skeleton of the building. In the mornings, of course, they carried on with their ordinary lessons. As a result the school not only produced a building, but turned into a well knit 'collective', and the general standard of behaviour and study was very good.

The pupils in these schools for adolescents, or, as they are called, 'over-grown pupils', stay till they have completed the seven-year curriculum and then they may either stay on and complete the final three years, or pass on to technical training in industry or agriculture.

Evening schools for 'industrial and farm youth' are run for young people who, for one reason or another, did not complete the seven-year school, or who wish to continue from the seventh form to the complete ten-year course. Those who are still completing the lower forms are becoming rarer, but large numbers of young men and women who left school at fifteen now feel the need for more education in order to keep up with the latest developments in science and technology and to be able to get promotion in their jobs.

These schools provide courses four nights a week, in four-hour sessions and the curriculum is the same as the ordinary school, except for some adjustments and short cuts possible for more mature students. Young workers are put into shifts which fit in with their school hours and during the examination period they are given leave with full pay. On completing the seven-year curriculum, the students receive fifteen extra days holiday with pay, and on completing the ten-year curriculum, twenty extra days.

There are two kinds of school for the musically gifted. For those with exceptional talent there are twenty-five schools in various parts of the Soviet Union, and children are accepted at the age of seven or even six years, on the basis of a competitive entrance examination. The ten-year curriculum of the ordinary school is completed in eleven years, as the daily time-table includes special music subjects and individual tuition. Homework includes

practising the chosen instrument, which is always provided for the child for as long as he needs it. Every pupil learns the piano as well as his chosen instrument. The schools have their own orchestras and the pupils are trained to give concert performances through playing to each other and to their parents and friends. A number of these schools have hostels.

On graduating, pupils from special music schools go to the conservatoire of music in one of the large cities, or to the musical pedagogical institutes to train as music teachers.

For children who are musical, but not to the extent of being eligible for a full time musical education, there is a wide network of music schools where they can go after lessons and learn to play on the musical instrument of their choice, free of charge.

Each of the main ballet theatres has a school attached, where pupils are taken from the age of 8 or 9 years. These schools also give a general education equivalent to the ten-year school as well as a specialised training.

There are four special art schools in the Soviet Union, in Moscow, Leningrad, Kiev and Kaunas, each taking about 300 pupils from all over the country. The pupils are selected by competitive examination at the age of 11 or 12 years. They are recommended by their schools or clubs. The successful candidates start in the fourth form and stay until the eleventh form, finishing the curriculum of the normal ten forms together with a specialist training in painting or sculpture. On finishing these schools pupils can continue their studies at one of the higher art institutes.

At all the schools for specially talented children the normal curriculum which forms the core of their work

ensures that a child who at any stage wishes to return to an ordinary school, or who has to do so if his talent does not develop in the right way, can fit into it without difficulty. It also ensures that artists of every kind do not develop in a one sided way, and are able to take an interest in the general life and progress of their country.

10

School Organisation

THE STAFF of a Soviet school includes a head, one or more deputy heads, a deputy-administrator, teachers, one or more librarians, a whole- or a part-time doctor, a full-time nurse (except for very small rural schools), a secretary, a book-keeper, office staff, laboratory assistants, permanent full-time cleaners and other domestic and kitchen workers. At the entrance to every school there is a cloakroom where children and adults alike must leave their outdoor garments under the care of the school cloakroom attendant.

The head of a seven- or a ten-year school is appointed by the Ministry of Education of the Autonomous Republic together with the director of the local education authority, and the appointment is approved by the Ministry of Education of the appropriate Union Republic. The candidate must have the equivalent of university qualifications and must have taught for at least three years. The teaching staff are appointed by the local authority on the recommendation of the head.

The head plans the teaching and educational work of the school and sees that it is carried out properly, and is responsible for the administration. The plan of work for the year is broken down into four terms and is discussed by the teachers at their general staff meeting at the end of August. When it is approved they use it as the basis of their own plans, which in turn must be approved by the head. All these plans must be completed before the beginning of the school year on September 1st.

The head is responsible for the attendance of all the children on the school roll, and to this end he works with the parents and the pupils' organisations.

The head is expected to hold regular meetings with the heads of departments and with other staff groups, as well as with the school doctor, the Pioneer leader, the librarian and the head of the 'method' room. Records or minutes are kept of these meetings and discussions so that decisions can be checked. The head should know each member of his staff personally and give him the work best suited to him; he must also encourage the teachers to study further and to keep up with developments in educational theory and practice. In this work the head is helped by the heads of departments, who should be appointed not only for their qualifications but for their ability to get on with people.

The head of the school visits lessons and discusses them with the teachers concerned. He checks the teaching and general educational plans of the teachers, and reports on and analyses the work of the school at staff meetings, subject meetings and meetings of teachers who take a particular form. All teachers in charge of a subject are expected to help their colleagues over difficulties.

The head is chairman of the staff meeting (staff council is the Russian term) and has regular meetings with non-teaching staff. He is also on the parents' committee, and on the pupils' committee.

The deputy head of the school may not teach more than two periods a day and also visits lessons. Every attempt is made in Soviet schools to help teachers who find it difficult to keep order or who do not seem to be able to cover the syllabus nor plan their lessons. It is not left to chance to see that every child gets good teaching, and so the head or deputy spends as much time as necessary with

an unskilled teacher, listening to lessons, discussing the weak points with him, helping him to prepare the next one—in fact extending the help normally given by a supervisor to a student on teaching practice.

The deputy head shares with the head the administrative and educational jobs of the school and both are responsible for seeing that the staff work together as a friendly and co-operative collective.

The deputy-administrator is responsible for the care of the school building and its contents, for its cleanliness and order, for a proper system of lighting, heating, hot water, and for the interior decoration which is done in the holidays. He is responsible for the work of most of the non-teaching staff. He is the link between the school and all the non-educational organisations concerned with the school, for obtaining supplies, building materials, fuel, and, in the country, for the proper repair of the teachers' flats or houses.

The work of the administrator covers a wider field than that of the school-keeper in an English school, as he helps in planning celebrations, in running technical circles, in planting out the school garden, and in preparations for examinations. He is also in touch with the parents' committees, which help the school in many ways, and with the school patron. When the agenda warrants it, he attends the staff meeting.

The school doctor is almost invariably a woman; she is a familiar figure about the place. Except in small village primary schools, she is either a full-time or half-time member of the staff, and always has a full-time nurse to assist her. The small village schools depend for their medical care on the local clinic.

The doctor has her surgery in the school, and all the

records are kept on the spot. Every child has a medical inspection at least twice a year, at the beginning and at the end. The inspection lasts about 25 minutes. The examination at the beginning of the year aims at discovering any defects in sight or hearing which decide the seating of a child in the classroom. Also the question of physical training is decided at this time. The second examination helps to decide whether the child needs to be sent to a sanatorium for treatment (sanatoria do not deal only with tuberculosis; there are sanatoria for various diseases, and for building up the health of delicate children), whether he is fit to go to the school camp, or whether he should be exempt from school examinations. There are other examinations during the year from time to time in order to prevent the spread of infectious diseases, and for similar reasons.

Children are treated for slight ailments or accidents in the school surgery; otherwise they are sent to the local clinic for treatment.

The doctor or nurse often runs after-school circles in hygiene and first-aid, and usually has a group of health monitors who can administer first-aid about the school and who act as propagandists for good health habits. They put up posters about the school and run a wall newspaper.

The doctor has an important say in the physical education of the children, as well as in the matter of their participation in sports and games. She also arranges special supervision of sports meetings.

The doctor and nurse inspect the school premises for cleanliness, lighting and ventilation, and may go into the school kitchen and canteen to see that the food is well balanced and prepared under hygienic conditions. They

also attend staff meetings from time to time and give talks to the parents on various health topics.

Every school has a general parents' committee made up of representatives elected by the parents of each form. The head of the school is a member of this committee and the chairman of the committee may attend staff meetings. A general parents' meeting is usually held at least twice a year, and form meetings once a term. The committee gives an account of its activities to the general meeting. It works in contact with the local Soviet, the school patron and the teachers of the school. The parents organise paying events and give the money to the school for special outings for the children or to buy extra equipment. The committee may *not* collect money from the parents.

Sub-committees may be appointed to deal with cultural work among the parents, to ensure 100 per cent attendance among the pupils, and for any other matter which may arise. Parents may bring forward for discussion any points related to the improvement of the work of the school. The matter is first discussed at the parents' committee and is then referred to the staff meeting.

All meetings must be minuted and letters sent out over the joint signatures of the chairman and the head of the school.

More and more schools in the Soviet Union are organising school meals for their pupils. These are eaten in one of the long breaks, and are provided by the school buffet service. In addition to the waitress, there is a teacher on duty together with a parent. The parents are taking an active part in helping to organise this service and taking turns in supervising.

The staff meeting, or council, acts as an advisory body

to the head and must meet at least five times a year. Extra meetings may be called if needed. One of the teachers acts as secretary, and minutes must be kept. Matters are decided by a majority vote, and the meetings are attended by the Pioneer leader, the librarian and, on occasion, the doctor, the deputy-administrator, and a representative of the parents—all, of course, in addition to the teaching staff. If the agenda requires it, a representative of the pupils' committee is invited.

At the first meeting of the year, at the end of August, before term begins, the plans for the year are discussed. These plans include the time-table, duties and, what is considered one of the most important questions, the general educational work of the school—this means the formation of good work habits, the development of self-discipline, the encouragement of socially useful activities, and the general activities which help in character formation. This meeting may take the form of a staff conference lasting one or more days.

At the termly meetings there is usually a discussion on some important current educational topic. This is opened by a member of the staff, who is expected to relate it to the work of the school. Criticism of a constructive nature is a common part of discussion in the Soviet Union, and the weaknesses of the school are analysed with a view to eliminating them as far as possible. At the last meeting of the year the head gives a report on the work, listing the successes, including the number of pupils who have done well, and also the weaknesses and failures. The discussion is aimed at finding the reason for failures—why certain children have to repeat a form, for example, and deciding on measures to prevent the same thing from happening again.

The decisions of the staff meeting are binding on its members. If a majority are in disagreement with the action of the head (and this does occur at times) the matter may be taken to the local education committee which must deal with it within a week and inform the school of its decision. On certain rare occasions a head may be removed from the school if it is shown that he does not act in a democratic way by discussing all general school matters with the staff.

The dates of holidays are decided by the Ministry of Education. The first and second terms are divided by the short few days of the November celebrations, the winter holidays in the RSFSR are from December 30th to January 10th, the spring holidays are from March 25th to April 3rd; the summer holidays begin at different times for different forms. The primary forms finish about May 24th, as well as the tenth form, which thus has time to revise for the examinations; the tenth-form examinations begin about May 30th and last till June 20th—there may not be more than one subject a day. The remaining forms break up about May 28th and the seventh-form examinations last from May 30th to June 6th. Dates in the other republics may vary according to climatic conditions.

The school library must be in a special room, with all the necessary equipment, not only shelves for books and tables and chairs for readers, but stands and show cases for exhibitions. A reading room for at least forty pupils at a time must also be provided. The school library is run on the same system as any public library, and has a fully qualified librarian (or librarians) who runs it as part of the educational work of the school. The librarian is a member of the school staff and has a place on the staff council.

The school budget has a special allowance for the library.

The choice of books is made by the librarian in close consultation with the teachers and should include a wide choice of fiction and non-fiction which will supplement the information given in the text books. Collections of simple reading books suitable for forms 1 and 2 are loaned as class libraries for use in the class room. The library must also provide books for a teachers' section covering the individual subjects as well as general educational work. Many books are produced by the Ministry's own publishing house and are sent automatically to all school libraries.

The librarian is responsible for the correct cataloguing and care of the books, and for using the money allocated by the school budget to buy new books.

There are regular hours when the library is open for the borrowing of books. The librarian has a group of volunteers from among the pupils who help in this work. The reading room is open at regular times and is provided with magazines, children's newspapers and other periodicals.

The library 'circle', besides assisting in the running of the library, helps the librarian to organise the various exhibitions for the purpose of introducing new books; commemorating a famous writer; showing some literary development or encouraging writing and reading among the pupils. The librarian also organises discussions on books, readings, talks by children's writers or by the children themselves on books they have read or on their favourite author or literary theme. The librarian also calls meetings of parents to advise them about their children's reading.

The librarian must help the children to choose books suitable to their age and help them to develop good taste and wide interests.

Children in the first form are taken into the library by

their teacher and shown how to use it. As soon as they can read adequately they are encouraged to join. Every child and teacher has a library card, and times are arranged so that pupils can change their books at least twice a week.

All the teachers are responsible for helping the children to become interested in reading and a list of books read by each child must be kept by the librarian and/or the subject teacher. There is frequent consultation on this matter between the librarian and the subject teachers. A reasonable number of books to be read by a child is considered to be 25 to 35 a year.

11

Teachers

AT THE TIME of the revolution over 75 per cent of the population of the Soviet Union was illiterate. The primary aim of the schools at this time was to teach people, both adults and children, to read and write. There was a great shortage of teachers and those who were educated were encouraged to teach those who were not. There were many cases of children teaching their grown up relatives to read and write.

Many people who started in this way as unqualified teachers remained in the schools as they developed, and never had time to become trained. As the demands of Soviet society on the school became greater and a wide curriculum came into being, well trained specialists were essential in the higher forms of the school. Up to quite recently, teachers of the primary forms received a two-years training after finishing the ten-year school or, before 1854, a four-year training after finishing the seven-year school. Specialist teachers were trained in pedagogical institutes for four years, receiving a diploma equivalent to a university degree.

Recently the training of teachers has been under review, and two important decisions have been taken. The first is a recognition that what is taught in the primary classes is of paramount importance and states that in 1857 the first 500 students are to be enrolled in faculties for training primary teachers in the four-year pedagogical institutes. In subsequent years the number of students accepted is to be raised to a level that will ensure that in the future all

primary teachers will have the equivalent of a university training.

The second decision concerns specialist teachers. Up till now these teachers have been trained to take one subject only. This caused some difficulty in smaller schools, which did not offer enough periods for full-time work. To obviate this difficulty, and to give teachers a wider education, they are going to have a five-year training and specialise in more than one subject. Subjects will be grouped, Russian language and literature with history, Russian language and literature with a foreign language, two foreign languages, physics with technical drawing and the basis of industry, biology with chemistry and the theory of agriculture, and other combinations. Longer training is now possible for two reasons. The very small war generation is coming up the school and, for the first time in its history, the Soviet Union has produced enough teachers to provide even a certain number of supplies. All university courses include lectures in psychology and pedagogy, so that students who decide during their time there to change to teaching, are able to do so without much difficulty.

Although the Soviet educational system is centralised and the schools follow a prescribed curriculum, with set syllabuses in each subject for every form, teachers can and do have a great influence on the organisations which are responsible for working them out. The Ministry of Education of the RSFSR carries out its research work through the Academy of Pedagogical Sciences of the Russian Republic, and the work of the Academy naturally has a great influence on the educational network of the other union republics. The institutes of the Academy do their research with the help of many thousands of teachers

all over the USSR, as well as in a network of schools. The research workers themselves spend a certain amount of their time in schools, as well as lecturing in training colleges and universities. When any change is contemplated in syllabuses, text books or organisation, it is first discussed at teachers' meetings and in the educational journals, and the syllabus or text book is tried out in the Academy's schools. This, however, is not done until all suggestions and criticisms have been taken into consideration and the necessary modifications made.

Twice a year there are teachers' conferences at which the current problems of the schools are discussed in the usual outspoken way. If failures or shortcomings in the work of the schools are felt to be the result of a bad syllabus, a bad text book or bad planning of the work to be covered, this will be brought out in the conference. For example it was found that the physics syllabus of the seventh form assumed a knowledge of mathematics which only came into the syllabus of the eighth form; some of the text books contained a great deal of unnecessary detail; the approach to arithmetic was in some ways formal and unrelated to real life. As a result of such criticisms and the ensuing discussions, changes are often made.

Text books are often written by a group of teachers, and when a new text book is needed a competition may be organised, and teachers or other specialists invited to submit manuscripts to the Academy.

Soviet primary teachers are paid on the basis of four teaching periods a day, and secondary teachers on the basis of three teaching periods a day. Any extra periods are paid extra, and may not be given to the teacher unless he agrees. Secondary teachers, whose basic weekly teaching time is therefore eighteen periods (three a day for six days),

usually work on an average twenty-four periods a week, and for this number are paid one and a third times the basic pay. As school finishes at the latest about 2.30, unless there are two shifts, there is time for marking exercise books, coaching children, running circles or attending a form or a staff meeting. Teachers do not work in two shifts unless they wish to.

If a teacher takes lessons for a sick colleague he receives pay at the usual rate for them. Sick benefit is paid by the trade union and the ordinary salary by the education authority. Teachers in rural areas have, in addition to their pay, free housing, heating, lighting and a garden. The basic pay of rural teachers is about 50 roubles a month less than that of others. After the first five years of teaching there is a ten per cent increment, after ten years there is a twenty per cent increment and after twenty-five years a long service bonus of forty per cent is added. Teachers of language, both native and foreign, and teachers of mathematics receive a small sum extra per month for having to mark a lot of written work, and form teachers also receive an added allowance.

Teachers in remote areas receive higher pay, varying from twenty per cent to a hundred per cent, according to the distance from Moscow. The double salary is earned by teachers in the Arctic Circle. In this way they are able to travel to the larger cultural centres for refresher courses, and to go to conferences. Women can retire at 55, and men at 60, and if they wish to go on working they may take the old age pension or their salary, whichever is higher.

Teachers with long service and records of good work are honoured with the title of 'honoured teacher of the republic' or receive the Order of Lenin.

Teachers are entitled to forty-eight (working) days

holiday in the year, and they usually get part of the winter and spring holidays as well. As the children have longer summer holidays than their teachers, there is time in the second part of August to have staff meetings and to prepare for the new school year.

There is one trade union including teachers in schools, all workers in higher institutes of learning including universities, and scientific workers. It is now an all-Union organisation for the USSR and is affiliated to the Central Council of Trade Unions of the USSR. No decision of any importance is taken by the Government or any Ministry without consulting the Central Council of Trade Unions, and the Council is responsible for the proper application and administration of legislation and regulations affecting the workers. The trade unions are responsible for seeing that their members have proper working conditions and cultural amenities. They control the Social Insurance fund which is equivalent to seven per cent of the total wages bill.

The trade union is a voluntary body, and membership is open to all. The basic unit is the local branch, which includes all members working (in the teachers' case) in a school or educational institution, and they elect a committee of from three to seven members by secret ballot. Membership in a school is open to all who work in it, that is, to the cleaners, cloakroom attendants and administrative staff, as well as the teachers. District and regional committees are elected at conferences of delegates from local branches. A central committee is also elected at a delegate conference. No union post is permanent, and all officers must be elected at regular intervals.

The local branches meet monthly and their main functions are to help members in their work; to encourage

them to take an active part in educational advance; to see that they have proper working conditions; to help them to get living accommodation when necessary, and to provide cultural amenities. The trade union helps to provide facilities for further study; organises courses, exhibitions and conferences; helps young teachers to feel at home in their new jobs. As the committee members are on the spot and working among their colleagues, they are able to see and understand the difficulties that arise and to take action to overcome them.

The school branch committee obtains theatre and concert tickets; arranges social evenings; runs a wall newspaper; obtains passes to rest homes; sees that sick members get proper hospital treatment and, if necessary, places in convalescent homes, and helps to sort out any difficulties that may arise between the administration of the school and the staff.

The teachers' union provides clubs and 'teachers' houses' (cultural centres), many on a grand scale, and builds rest homes at resorts for its members. Sport, travel, and a wide variety of holiday facilities are available. The teachers' sports society has 300,000 members, including several Olympic champions.

An example of a 'Teachers' House' is the former Yusipov Palace in Leningrad. It is the oldest building in the city and ranks as an historical monument. It was given to the teachers in 1821 at Lenin's suggestion. Every year more than 500 lectures are organised here on pedagogical, literary or other subjects. Twice a week there are evenings when teachers come to exchange experiences and discuss their subjects. Over 1000 teachers belong to art classes, and there are several choirs and operatic and dramatic societies. The small theatre in the palace, seating 300, is an

exact replica (built by Yusipov) of the former Mariinsky Theatre, and it has a full sized stage. The library has 100,000 volumes, including a large number of foreign titles. There is also a good children's library for use by the members' children, and a large number of out-of-school circles for them. The budget for this house is two million roubles a year.

The Yusipov Palace is the cultural centre for all teachers in the Leningrad region, and, in addition to all the educational facilities, has a series of large drawing rooms, furnished in period style, where members can meet their friends for a quiet talk. The 'white' drawing room is used for dances and leads into a concert hall seating 500, where concerts are given five times a week. Each district of Leningrad has its own house on a smaller scale, and other cities have similar centres. In the villages the teachers are members of the state or collective farm community and use the farm clubs and join in with the cultural activities there.

The trade union often pays part or the whole price of passes to rest homes or convalescent homes for its members, and runs summer camps for their children.

The teachers' union publishes jointly with the Ministry of Education the Teachers' Newspaper which appears three times a week. Most of the articles in this paper are written by teachers about their work, and a great deal of discussion takes place in its columns. There is also a number of other educational journals in which teachers write of their ideas, experiences and results. There are many ways in which the work of a teacher is made known to the profession: he may be asked to give a talk to his colleagues from the schools in his district; a tape recording or transcription may be made of one of his lessons and

put in the method room in the educational centre; he may be asked to give an 'open lesson' for other teachers of the same subject, or he may be asked to write about his method of work for one of the journals. The heads of schools and inspectors are always on the look out for such teachers and try to spread the results of interesting and successful teaching as widely as possible.

Teachers in the Soviet Union are paid on a level with medical specialists, engineers and highly skilled workers in factories and their status is high. They are elected as members of local soviets and a number of teachers are members of the Supreme Soviet.

12

Higher Education

ENTRANCE TO THE UNIVERSITY or to a higher institute is by competitive examination which is open to anyone between 17 and 35 years of age who has completed the ten-year school. Pupils passing the examinations at the end of the tenth form with a gold medal are exempt from any entrance examinations.[1]

The type of entrance examination depends on the university or institute. Russian language and literature are compulsory in every case. Students who know clearly what speciality they want to follow go to a specialist institute, which has university status, while those who wish to study science or the humanities with a view to doing research enter the faculty of a university. Entrance examinations for higher technical colleges include Russian language and literature, mathematics, physics, chemistry and one foreign language, while those for history faculties include the Russian language and literature, a foreign language, the history of the USSR and geography. A student applying for admission to a non-Russian university must, of course, take an examination in the language of the university.

There is an enormous network of institutes providing a wide range of specialised courses, including engineering, machine building, medicine, teaching, transport, agriculture, law and economics.

Most universities and higher institutes come under the Ministry of Higher Education of the USSR, but

[1] See footnote on p. 41.

some come partly under other Ministries. Pedagogical institutes, for instance, come under the Ministry of Education.

Students at universities and higher institutes must follow all the lectures on the time-table and attend seminars. The curriculum of all faculties includes a study of the fundamentals of Marxism-Leninism, political economy and dialectical and historical materialism. Courses vary from four to seven years and in the higher technical institutes a good proportion of the time—from sixteen to thirty-eight weeks—is spent on practical work. In agricultural institutes the time spent on practical work is as much as forty to fifty-two weeks while in the pedagogical institutes it is twelve weeks.

The academic year is divided into two terms, from September 1st to January 23rd and from February 7th to July 1st. Students take examinations at the end of a term or a year and they are not allowed to follow the next course unless they pass these examinations. They take the state final examinations or, in the case of some higher technical institutes, submit a thesis. At the university the students are expected to submit a thesis as well as sit for the state examinations.

There are no fees for higher education in the Soviet Union and students receive monthly grants which continue and increase if they make satisfactory progress. These grants vary from 220 to 600 roubles a month, and students who are assessed as 'excellent' receive twenty-five per cent more. The majority of students receive a grant: at Moscow university, for example, the number averages ninety-five per cent. Accommodation in a hostel is 15 roubles a month, including heating, lighting, linen and the use of cooking facilities and a laundry. Meals in the

student canteens are subsidised and cost about 200 roubles a month.

The students' union provides facilities for cheap holidays all over the country and for participating in every kind of sport; it also runs clubs for relaxation and leisure time pursuits. In the last year or two, students have been spending part of the summer in helping to get in the harvest in the 'virgin lands' and have shown a true pioneer spirit in their enthusiasm.

Universities exist in all the Union Republics, as well as different types of higher institutes. The increase in the number of scientists in the non-Russian republics has made it possible to establish Academies of Science in twelve Union Republics, including the Uzbek, Tajik, Turkmenian and Kazakh republics.

During the students' last year posts are advertised in the university or institute and are allocated as the result of an interview. In many professions the young people are expected to work on the new construction sites which are being developed, and this often means going a long way from the cities. For the first two years after graduation students may be assigned to jobs in any part of the country unless there are very good personal reasons why they should stay in a particular place.

13

National Minorities

BEFORE THE REVOLUTION the official language of the Russian empire was Russian, and business, law and cultural life were all carried on in that language, except when the aristocracy and intellectual élite used French or German. One of the first declarations of the Soviet government was that all nationalities would have the right to their own language both for official use and in the schools.

For many of the smaller national groups it was necessary to invent an alphabet and a written language before they could study it. By 1831–2 most national schools in the RSFSR were using text books in their native language in the Latin script which had been made for them. At the same time it was essential for everyone to know Russian, the common language of all the peoples of the Soviet Union. Children found it confusing to learn two alphabets and, after a great deal of research and thought, the Latinised alphabets were changed into Cyrillic, to bring them into a closer relationship with Russian.

In 1824 the Central Publishing House of the Peoples of the USSR was set up and published in that year alone books in twenty-five languages. By 1831 books were being published in seventy-six languages, and in that year the publication of books was taken over by publishing houses in the national republics and regions. In Moscow a Central Research Institute was set up to study the questions of teaching the native and the Russian languages to non-Russian peoples.

Between 1838 and 1839 this institute produced sylla-

buses for twenty-nine different nationalities, including peoples like the Ossetians, the Yakuts, the Bashkirs and the Buryat-Mongolians. It was a far harder task to produce syllabuses and text books in the native literature, much of which had to be collected and written down from the words of people who themselves had learnt them by word of mouth from their parents.

It was also necessary to train teachers from the national republics and only in recent years have the schools had enough qualified teachers and the universities and higher institutes produced their own personnel.

The Academy of Pedagogical Sciences is still doing important research on the training of teachers for national schools, especially for the primary classes, as the latter will have to teach the Russian language (as a 'foreign language') from the second form, and therefore must themselves be bi-lingual. Another question which has not yet been resolved is whether in any national schools the pupils of the higher forms should change over to Russian as the main medium of study, instead of finishing to the end of the tenth form in their native language.

The teaching of Russian in non-Russian schools has also been a subject for research, and text books for Russian have been standardised, although printed in each language, and the syllabuses made to cover the same ground. It is considered important for a native teacher to begin the Russian course with the second forms as she understands better than anyone the language difficulties of her pupils.

The solution to problems of national education no longer presents the difficulties encountered when national groups were illiterate and could not themselves participate in discussions and research. Now that industrial and agricultural developments are well advanced in their coun-

tries, the national republics can make the most of their rich cultural heritage. They are quite capable of dealing with their own educational problems while still playing their part in the developmen. of the Soviet educational system as a whole.

14

Organisation

THE PRINCIPLES of Soviet education are laid down in the programme of the Communist Party of the Soviet Union, and directives on education are given by its central committee. Laws and decrees on education in general are made by the Supreme Soviet of the USSR and by its Council of Ministers, who determine such matters as the type of school, the school beginning and leaving age, and the budget.

Higher education, which serves the whole Union, is not controlled by the individual Ministries of Education of the republics, but by the Ministry of Higher Education of the USSR. This central authority lays down the curriculum, determines the organisation of studies and prepares the examination papers; appoints the rectors of the universities and the directors of institutes; approves the conferring of doctorates, professorships and post-graduate degrees and makes the rules for entry into higher educational institutions, which number over 500. Universities, higher technical, agricultural and some other institutes come entirely under this Ministry, while others come under both the Ministry of Higher Education and the Ministry with which they are mostly concerned—for example, the medical institutes come partly under the Ministry of Health, the pedagogical institutes under the various republican Ministries of Education, and the art and physical culture institutes under the Ministry of Culture.

Kindergartens and schools, special schools for working and collective farm youth, and schools for adults come

under the Ministries of Education of the fifteen Union republics. The training of librarians and workers in museums and cultural centres is organised by special committees.

The twenty-two Autonomous Republics (such as Daghestan and Yakutia) have their own Ministries of Education and these, together with the regional education authorities, and under them the town and rural education authorities, come under the Union Republic Ministries.

Included in the system of education are the children's libraries and reading rooms, clubs, Pioneer palaces and centres, children's theatres, cinemas, young naturalists' experimental centres, children's tourist centres, parks and other institutions. Similar cultural amenities for adults are under the Ministry of Culture of the USSR.

The Ministers of Education are personally responsible for the work of their Ministries, and they each appoint a 'collegium' which sits under their chairmanship and whose job it is to check on the carrying out of government decisions on education, to verify the appointment of educational personnel, and to see that all instructions on syllabuses and other school matters are in order. This body is advisory.

The appointment of a Minister of Education in each republic ensures that the educational network is 'socialist in content and national in form'. The regional and local education authorities are not only under the Ministry but are also linked with the regional and local Soviets. Each local authority has an education committee to help carry out the education plan.

The Ministry of Education has its own publishing house (all text books are published in the native language), a publishing house for children's literature, and an educa-

tional method council. The Academy of Pedagogical Sciences of the RSFSR which comes under the Ministry also has its publishing house, an educational library and museums of education and of toys.

The Ministry has its own factories for the production of school equipment and visual aids. The chief engineers of these factories work with a special method council of educationalists to ensure that production is up to standard.

The Ministry of Education of the RSFSR confirms the appointment of the Ministers of the Autonomous Republics and the directors of the regional departments. These appointments are proposed by the appropriate Soviets. This system of dual control is easily understood in our country where there is a system of both local and Ministerial control in the educational field.

There are three categories of inspectors in the Soviet Union. The function of each kind is clearly defined. The district inspector, who comes under the local education authority, spends more than half of his time in the schools, and he checks on the covering of syllabuses, the work of the staff council, the parents' committee, the school attendance, the supply of text books, the standard of discipline, the working of the Pioneer organisation and many other aspects of the work. He meets the staff of the school and discusses with them his findings and makes suggestions.

The regional and city inspectors are responsible for a group of education authorities, and here again they are out of their offices at least half of their time. Included in their job are the educational budget, the organisation of examination commissions for the tenth form of the schools, and the development of the school network to satisfy the needs of the child population. Candidates for such inspectorates must have at least ten years' teaching experience and be

qualified at university level. District inspectors must have taught for at least five years and have the same qualifications.

The third category of inspector is under the Ministry of Education and is in charge of a territory comprising a number of regions and including Ministries of Education of Autonomous republics. He spends about two months a year travelling throughout his area and carries out a survey with the help of the local inspectorate. This survey may be of a general nature or it may be confined to specific subjects or aspects of education.

After any inspection the inspector must make out two reports: one for the school authorities and one for the body on whose behalf the inspection is carried out. He must discuss his conclusion with the head and teachers of the school and then, in the case of a district inspector, send his report to the appropriate committee of the local soviet.

The school budget is provided through the local authority, either the rural or the city soviet, and is calculated according to the number of classes, the number of pupils and the number of teaching periods required to satisfy the time table. In addition, the salaries of the non-teaching staff must be provided, and allowances for equipment, repairs, out-of-school activities, library, and running expenses made.

The latest figures show that 14 per cent of the total state budget was spent on education. For 1857 the expenditure on education was 79.1 milliard roubles, of which 53.1 per cent was spent on general education (schools, children's homes, kindergartens, cultural education and the press), 32.9 per cent was spent on training teachers and other personnel, and 14 per cent was spent on research institutions.

15

The Academy of Pedagogical Sciences

THE ACADEMY OF PEDAGOGICAL SCIENCES of the RSFSR was founded in 1944 and carries out its work through nine research institutes. Its influence is felt throughout the whole of the Soviet Union as the curriculum, syllabuses and text books for the school system are worked out by the educational experts in the institutes. I. A. Kairov, a former Minister of Education, is the president of the Academy, there are two vice-presidents and a secretary-academician. Members, corresponding members and officials are elected regularly. At the last election there were thirty-two members and fifty-three corresponding members, among them some of the best practising teachers in the Union.

The presidium of the Academy has a centre for studying the educational systems in foreign countries; a section which collects and gives information on educational development and editorial boards working on the publication of a *Children's Encyclopedia*, a pedagogical dictionary and an encyclopedia of education. The Academy has its own publishing house and its publications include the monthly journals *Soviet Pedagogy*, *The Family and School* and *Questions of Psychology*. From time to time *Proceedings of the Academy* is issued and contains documents on the research work of the institutes.

The Academy uses a group of schools in various parts of the country, as well as kindergartens and children's homes, for experimental work and observation. The new syllabuses were first tried out in these schools and discussed

and modified before being adopted for general use in the school system. The work of the Academy is two-way—it carries out research with the help of thousands of teachers and it gives help to the schools in their everyday work.

In the last few years there has been some criticism of the Academy. It has been working in too theoretical a way, too divorced from the day to day problems of the teacher. Members of the Academy have admitted this to be true, and are trying to improve their contacts with the schools and to deal in a more realistic way with their problems. Meetings of the Academy have taken place in cities remote from Moscow, and more teachers have been drawn into its work.

The research institutes of the Academy are: the institute of the theory and history of education; the institute of methods of teaching and learning; the institute of psychology; the institute of defectology; the institute of school hygiene and physical education; the institute of national schools; the institute of artistic education; the Leningrad institute of pedagogical research; the Lesgaft natural science institute (Leningrad).

The institute of the theory and history of education has departments dealing with school administration, moral education, children's homes, family upbringing, higher pedagogical training, the history of education both at home and abroad, and pre-school education. The institute prepares and publishes text books on educational theory and on the history of education. The department of moral training studies the questions of Communist morality, the work of the Komsomol and the Pioneer organisations in the schools and the work of Makarenko. The department of pre-school education studies children's play, the

development of speech and the number sense; toys and artistic development, and the transition from kindergarten to school.

The institute of methods has a department for nearly every subject in the curriculum of the schools. There is also a department for studying general teaching methods, one for polytechnical education and a section dealing with rural schools and schools for young workers. Some of the research workers of this institute teach full-time in the schools. The thirty new text books now being issued, in connection with the changes in the school curriculum, are under the supervision of the institute.

Art and music are not included in the work of the institute of methods as they are the basis of the work of the institute of artistic education. The latter has five departments dealing with pre-school education, musical education, the fine arts, out-of-school education in the arts and music, and the theory and history of art education. The institute has its own children's choir and runs a number of out-of-school circles.

The institute of defectology carries out its research under four main headings: hearing defects; sight defects; speech defects; and defects of the brain. The staff of the institute includes educationalists, physiologists, doctors and psychologists. Part of the research is done in schools for physically handicapped and mentally retarded children and their teachers are drawn into the work. The institute uses a number of different methods in studying abnormal children—clinical, physiological and psychological techniques are all employed, as well as educational work and teaching. The curriculum of all types of special schools is worked out. The introduction of practical training and agricultural work for both physically and mentally handi-

capped children has been found helpful in compensating for defects and establishing confidence.

The institute of psychology has three main departments: general psychology; the psychology of children; and educational psychology. The department of general psychology deals with problems of perception and sensation, problems of brain and speech, problems of individual psychology based on Pavlovian physiology, and problems of the psychology of labour and industrial training. The department of child psychology studies the pre-school and the school child; the department of educational psychology deals with the general development of the child and with teaching and upbringing.

The institute of national schools has an important role to play in the Soviet educational system. The Soviet policy has always been that every national grouping has the right to schools in its native language. Even those who are not living in their own country, but for some reason are working in a region where another language is spoken, may have a school specially opened for their children, provided the group is of a reasonable size. Russian is taught from the second form in all non-Russian schools and it serves as a common language for the Soviet Union. The institute has carried out extensive research into the teaching of native languages for peoples like the Komi, the Chuvash and the Mordavians. In addition to producing text books and teaching aids, the question of teaching Russian as a 'foreign' language has occupied a great deal of attention, and text books have been produced after much discussion. In some national schools the experiment of teaching all subjects in Russian in the three top forms has been tried. This was done to prepare pupils for universities or higher institutes in the Russian centres.

The Union republics have their own universities where lectures and seminars are given in the native language, but there are many national groups with fairly small populations which have no local university and for whom, therefore, the question of the teaching of Russian in their schools is extremely important. The Academy organises discussions and conferences on questions of national education in the autonomous republics and regions.

The Leningrad Institute was opened six months after the end of the war, and differs considerably from the institutes in Moscow in that it is a general research institute of five departments working on various aspects of pedagogy. The institute works in close connection with three schools in Leningrad and uses twenty other schools as well for its work. Its work is closely linked with the Academy in Moscow. The departments devoted to methods deal with specific school subjects, and are specially interested in three forms: the first form—how children begin their learning at school and the interrelation between the learning of Russian and other subjects such as arithmetic and handwork; the fifth form, where specialist teaching begins, with particular attention to the subjects begun at this stage; and the eighth form, which begins the last phase of school life, paying special attention to mathematics, technical work and all the subjects connected with polytechnical training.

There is a 'Parents' University' attached to the institute which carries on a two-year course for parents, consisting of lectures and discussions, twice monthly. An average of 120 attend, usually more mothers than fathers.

The institute has a museum of education in which many of the exhibits have been prepared by teachers and also school children.

The Academy organises annual *Pedagogical Readings* by teachers; over 2000 teachers from all over the Soviet Union are doing research work under the direction of the Academy. These teachers send in their papers and the best are chosen to be read at the conferences. Some of them are then published. Many regions of the Soviet Union are now organising similar 'readings' by the local teachers and send the best to the Academy.

16

Institutes for Improving Teachers' Qualifications

TEACHERS WITH LESS than fifteen years' experience are expected to take a refresher course every five years. It is not merely a question of keeping up with educational developments, but of keeping up to date with scientific and industrial developments as well. Science teachers must know about the latest discoveries in physics and chemistry, biology teachers must know of the new methods used in agriculture, geography teachers must know of the changing courses of rivers and the new centres of industry and agriculture, and metal and woodwork teachers must learn the latest techniques of their crafts.

Refresher courses are provided by Institutes for Improving Teachers' Qualifications, both on the spot and by correspondence. These institutes exist in every city, town and region of the Soviet Union and are under the appropriate education authorities.

One way of following a course is to attend an institute once a week for six hours. The teacher's timetable is arranged in such a way that he gives all his lessons on the other five days of the school week and is free on the day of the course. The course is divided into three sections; philosophy; pedagogy (education and psychology); and the special subject. Lectures are given by the permanent staff and by experienced teachers; practical work takes place in laboratories or subject rooms equipped in the same way as those in the schools. The teachers learn to make equipment

and visual aids and prepare model 'open' lessons which they give in their own classrooms at school before a group of their colleagues.

Teachers with fifteen or more years of experience take part in seminars and do research work on some aspect of the teaching of their subject. There are also special courses for teachers of primary classes.

Each subject faculty of the institute has its 'method room' where specialists attend regularly for consultation on teaching methods. The latest visual aids and equipment are on show here, as well as accounts or verbatim reports of interesting lessons. Teachers come here also to read the latest publications and books of reference, as well as the specialised educational journals.

The institutes also serve as educational centres for the neighbourhood. Lectures are given on educational topics; groups of teachers meet for discussions on the latest developments in the teaching of their subjects, and regular educational conferences are held. Exhibitions of work from schools or of some specific aspect of teaching, or of work produced in school 'circles', are shown regularly and are visited by teachers from all the schools within reach.

Teachers are encouraged to do research and to prepare papers which are read at annual conferences. The best papers are sent to the appropriate institute of the Academy of Pedagogical Sciences and are bound and put in their reference libraries. Some are published by the Academy.

17

Future Prospects

EACH NEW PROGRAMME of development in the Soviet school has been carried out more rapidly than the one before. At present it is difficult to be up to date, for in this period of completing the setting up of the ten-year compulsory school for all, Soviet educationalists are already discussing and organising the next stage. There are already fifty experimental schools with an eleven-year period of study, and where the curriculum of the present top three forms is spread over four years. The pupils of these top forms (who have chosen, voluntarily, with their parents' consent, to attend) will work in agriculture or industry for part of the week and study the rest of the time. They will be paid apprentice wages for their work, and leave school as qualified skilled workers.

It is envisaged that schools will later cover twelve years, and so give young people the chance to continue a general education, but at the same time they can choose a particular group of subjects for their main study in the last two or three years. Schools may provide different courses; the details of this plan have not, however, been worked out, but one proposal is that after an eight-year general education, pupils should transfer to specialised schools.

The development of polytechnical training is taking varied forms, and each school is finding out what suits its pupils best. In many cases the work done is of a socially useful nature and serves as a means of helping the community. Brigades of older pupils will decorate their schools

in the summer, lay out sports and games grounds and even help in the building of new schools.

There are plans for establishing a school meals service similar to that existing in England, and for encouraging all children to take advantage of it; this is of particular importance in schools where there is an 'extended day'.

The boarding school system is being expanded to include places for a million children within the next few years, and facilities for taking up extra languages, musical instruments, and artistic pursuits are being provided. Two Leningrad boarding schools are making the experiment of teaching Chinese and Hindi, respectively, with special lessons on the history and culture of the countries concerned.

Syllabuses are still at the stage of being revised and improved, and examination questions also. Now no matriculating certificate is complete without a mark assessing the practical work done by the pupil, and a poor mark for practical subjects may be a contributory reason for keeping a pupil back for a second year.

The emphasis at the present time is on the relationship between the school and life in the Soviet Union; the school must be closely linked with life, must prepare its pupils for life, and, by 'life', Soviet educationists mean productive labour and cultural activity, and active participation in the development of their country.

18

Postscript on Future Prospects

SUMMARY of N. S. Kruschev's speech to the Congress of the Komsomol in April 1858 (from the section on education):

There are serious shortcomings in our educational system. Our ten-year school prepares young people only for entry to the university. Life has shown us that this is not correct. Higher educational institutions can only take 450,000 students, about half of which are day students. The majority of young people staying ten years at school, who do not pass the entrance to university, are not prepared for practical life . . . they do not understand how to work in production. As a result a large number of young people and their parents are not satisfied with the situation, and there are even certain young people who are unwilling to go to work in industry or farming, thinking it beneath them. . . . It is time to reorganise our system of educating the rising generation; we cannot accept such shortcomings as those which fail to give our pupils a respect for physical labour. . . . All children going to school must be prepared for useful labour, for participation in the construction of communist society . . . every individual living in a communist society must contribute his share of work to the construction and development of that society.

The Soviet school must prepare an all-round educated person, well versed in the sciences as well as being able to labour systematically, a person who wishes to be useful to society, to participate actively in productive labour necessary for that society.

We have many young people who, after finishing the ten-year school, are working in industry, and a number who did not reach the tenth form. Many of them are working well and are continuing their studies while working. We need to pay more attention to the work of the evening schools for working youth, where those who wish can complete their secondary education . . . however we should avoid the situation where these schools only give courses that lead to university entrance, and should give the students the possibility of increasing their professional knowledge, and becoming better qualified at their jobs.

It is clear that we must also improve our higher education, link it with production and take in more students who have already spent a period of time at work . . . in the development of higher education it is necessary above all to extend both evening and correspondence courses. We must also give far more opportunity for those studying in their spare time to follow courses in music and the arts.

In the reorganisation of our school system we may possibly decide to have a general school education up to a certain age and then some sort of factory school where general education will be combined with some kind of specialised training so that a proper understanding of life is given, so that pupils really know how to hold a hammer. This kind of education will be more in line with the democratic principles of Soviet society. In this way it will be impossible for one person to go to the university and not another, and for the latter to be considered a second class citizen. Every boy and girl, whatever their parents, must prepare themselves for useful labour on the same basis . . . first study, and then work . . . let them work a year or two, continue to study in the evenings, and then, when they reach the more advanced courses, they can

perhaps have two or three days a week off to follow these courses. Possibly for the last year or two of their course they can have full time for study. In this way they can become fine specialists.

The selection of students for higher education who come from the factories or farms must take place with the participation of the Komsomol and trade union organisations on the job, who will know the young people and their attitude towards their work and the collective. The idea of factory institutes should be considered, and agricultural institutes must be situated on large state farms. Let the agricultural students study on the spot, and not be afraid when a cow turns her head!

The work of the universities, medical, pedagogical and other institutes must be more closely linked with everyday life, but their form must of course be carefully thought out. . . .

Extracts from N. S. Kruschev's statement to the Presidium of the Central Committee of the Communist Party of the Soviet Union, September 1858:

What practical measures should be taken to reorganise the school system? All children, without exception, after a seven- or eight-year compulsory school, should go to work in factories, farms or enterprises. That would be democratic, and would give equal conditions to all citizens, and would be an excellent education for all young people in the heroic tradition of the working class and the collective peasantry.

The whole system of education, both schools and higher institutes, must ensure the proper training of engineers, doctors, teachers, scientists, agronomists, specialists in every field, skilled workers in industry and agriculture.

They must become even more highly qualified than before. With this in view, it is necessary to divide schooling into two stages. The first stage should be a seven- or eight-year school where children receive a general and polytechnical education. The actual form of this school should be left to the Union republics to decide. It is necessary to think seriously about the content and the curriculum of this school.

In the eight-year school, the first stage of education, the curriculum must include the basic sciences, polytechnical and labour training, the development of communist morality, physical training and the development of good taste in art. The children must not be overloaded, and their health must be safeguarded.

Although we have equality of the sexes, there are specific jobs which are the province of women. They should know how to look after children, to cook and manage the home. Although in the future we shall develop communal feeding still further, nevertheless we must include cooking and needlework in the curriculum. We must improve the material conditions of the schools, abolish the two-shift system, and have up-to-date equipment.

The second stage of education can take a variety of forms. One of these could be a two- or three-year school with a definite professional bias. In certain places there could be factory schools where the pupils continue their studies with the possibilities of acquiring practical work habits, not mere abstract knowledge. In the village two- or three-year schools can give practical and theoretical training in agronomy, animal husbandry and other aspects of agriculture. In this way young people will leave school with the necessary knowledge and experience and the mastery of work technique to enable them to take their place in life.

The alternative to this system is that after the eight-year school all youngsters should go to work. This would mean that in the near future between 2 and 3½ million young people would go to work, 40 per cent in the towns and the rest in the country. This is not a simple problem, especially as managers do not like taking on young workers under 18 years of age. This must be changed and the whole question of finding adolescents work near their homes must be gone into. Also the setting up of special shops for them in factories, and the care of their health must be organised. These young people must be helped to become qualified, either by attending special courses on the job and a system of apprenticeship or by attending a two-year trade school. An alternative could be trade schools in which the pupils continued their general education at the same time as they followed specialised courses.

. . . If we agree that it is necessary to reorganise our school system, we must ensure that there is no gap in the supply of students for higher education. . . . In this transition period of three or four years a number of ten-year schools should remain in existence, and it may be a good idea to keep children specially gifted in physics, mathematics, biology, etc., at school so that our higher educational institutions receive students well prepared to study the exact and other sciences. . . .

It will probably be necessary to discuss these questions at a plenary session of the Central Committee . . . and it may be found useful to elaborate them so that they can be discussed by all the people of the country. A meeting of the Supreme Soviet will then be convened to discuss their solution. Finally, definite decisions must be taken by the Supreme Soviets of the Union republics, for education comes under their jurisdiction.

Lesson Scheme for the Secondary School

SUBJECT	FORMS									
	1	2	3	4	5	6	7	8	9	10
	Periods per week									
1. *Russian Language and Literature*	13	13	13	9	9	8	6	*6/8	4	4
2. *Mathematics*	6	6	6	6	6	6	6	6	6	6
3. *History*	–	–	–	2	2	2	2	4	4	4
4. *Constitution of the USSR*	–	–	–	–	–	–	–	–	–	1
5. *Geography*	–	–	–	2	3	2	2	2/3	3/2	–
6. *Biology*	–	–	–	2	2	2	3	2	1/2	–
7. *Physics*	–	–	–	–	–	2	2	3	4	5
8. *Astronomy*	–	–	–	–	–	–	–	–	–	1
9. *Chemistry*	–	–	–	–	–	–	2	2	3	3/4
10. *Psychology*	–	–	–	–	–	–	–	–	–	1
11. *Foreign Language*	–	–	–	–	4	4	3	3	3	3
12. *Physical Culture*	2	2	2	2	2	2	2	2	2	2
13. *Drawing*	1	1	1	1	1	1	–	–	–	–
14. *Technical Drawing*	–	–	–	–	–	–	1	1	1	1
15. *Singing*	1	1	1	1	1	1	–	–	–	–
16. *Practical Work*	1	1	1	1	2	2	2	–	–	–
17. *Practical work in Agriculture and Electrotechnics*	–	–	–	–	–	–	–	2	2	2
TOTAL	24	24	24	26	32	32	32	33	33	33

Each period is 45 minutes.

Eighth, ninth, tenth classes have 188 periods a year for excursions connected with polytechnical studies.

* 6 periods in the first half year, 8 in the second.

EXPERIMENTAL CURRICULUM FOR 1857-8, TO BE TRIED OUT IN CERTAIN SCHOOLS

SUBJECT	FORMS									
	1	2	3	4	5	6	7	8	9	10
	Periods per week									
1. *Russian Language and Literature*	13	13	13	9	9	8	6	5	4	4
2. *Mathematics*	6	6	6	6	6	6	6	6	6	6/5
3. *History*	–	–	–	2	2	2	2	4/3	3/4	4/5
3. *Geography*	–	–	–	3	2	2	2	2/3	3	–
5. *Biology*	–	–	–	2	2	3	2	2	1	–
6. *Physics*	–	–	–	–	–	2	3	3	4/3	4
7. *Astronomy*	–	–	–	–	–	–	–	–	–	1
8. *Chemistry*	–	–	–	–	–	—	2	2	2	4
9. *Foreign Language*	–	–	–	–	4	4	3	3	3	3
10. *Physical Culture*	2	2	2	2	2	2	2/3	3	3	3
11. *Art*	1	1	1	1	1	1	–	–	–	–
12. *Technical Drawing*	–	–	–	–	–	–	1	1	1	1
13. *Singing*	1	1	1	1	1	1	–	–	–	–
14. *Practical Work*	1	1	2	2	2	2	2	–	–	–
15. *The principles of production*	–	–	–	–	–	–	–	3	4	4
TOTAL	24	24	25	28	31	33	31	34	34	34

Autumn and spring work on the school plot for the 5th, 6th and 7th forms and practical work in industry at the end of the school year make an equivalent of 102 periods for town children and 138 periods for country children.

Practical work in industry for forms 8, 9 and 10 at the end of the school year make an equivalent of 192 periods for town and country children.

Excursions during the year make an equivalent of 191 periods.

Syllabuses

SYLLABUSES are printed in booklets by the Ministries of Education. The primary classes are covered by one booklet and each of the subjects taught in the upper forms is printed separately. The explanatory notes and suggestions on methods take up a considerable number of pages, and then each topic is given under main and sub-headings with the suggested number of periods to be devoted to each, and sometimes also the number of periods for homework. By reading the notes it is possible to understand the aims and objects of Soviet educationalists regarding the teaching of each subject.

It is impossible in a small book to give the translations of every booklet in full and therefore in most of them only the headings to each topic have been included and a summary of some of the notes has been included.

These syllabuses are being used in the schools all over the Soviet Union, with slight variations in the Union Republics. A number of the syllabuses for the sciences and polytechnical subjects, however, have been issued in revised form to several hundred 'experimental' schools and, when they have been tried out for a year or so, they may be finalised and adopted for universal use.

PRE-SCHOOL

Suggested Syllabus for Kindergartens

NUMBER

First group. The difference between 'one' and 'many'. Counting up to 3. The approach should be entirely individual and related to the child's life. '1 spoon', '2 spoons'; '1 doll'; '3 forks'.

Second group. Counting up to 5. Adding and subtracting units. 2 is 1 and 1; 3 is 2 and 1 or 1 and 2, etc. Games involving these processes. Learning in groups as well as individually. (40 *periods*)

Third group. Counting to 10. Number bonds of 10. Addition and subtraction. Use of numerical games, pictures, lottos, shops. Oral solution of very simple problems of type: 'There were 4 fish in the aquarium. Another one was put in. How many were there altogether?" (40 *periods*)

APPENDIX II

DRAWING AND PAINTING, CLAY, APPLIQUE, MODEL-MAKING

First group

(1) PAINTING AND DRAWING. Understanding of lines and closed figures; lines in a given direction 'from the top to the bottom, from left to right'; controlling the brush to paint a road, a ribbon, rain, balls, balloons, windows. Gradual understanding of basic forms to paint, for example a girl with a round head, a dress, arms and legs as lines in the right direction; a house as an oblong, with several windows; a tree with sloping or horizontal branches. Pictures should be large, using up the whole page.

Coloured pencils and poster paints should be used. Children should be told how to hold both pencils and brushes, be taught the principal colours. They should be encouraged to draw simple events from their own experience, not solely objects, but scenes such as, for example, a girl playing with a ball. They should also be encouraged to paint freely their own pictures. (40 *periods*)

(2) USING CLAY. Rolling it, shaping it, making it into balls, flattening it, putting an edge on it, using fingers to mould it—making 'snakes', balls, rings, 'pancakes', plates and cups.

More complicated shapes—carrots, a handle to the cup. Making models with several simple shapes—dolls, animals. Free modelling. (30 *periods*)

(3) APPLIQUE. Using coloured geometrical shapes already cut out of paper to make patterns. Learning the names square, circle. Learning the names of two colours. Matching these colours. Sticking the patterns on a plain piece of paper. By the end of the year learning the name of triangle, edge, corner, middle. (10 *periods*)

Second group

(1) PAINTING AND DRAWING. A more careful study of the shapes of objects and parts of objects through observation. To draw large enough and to colour without going over the edges; to take the right amount of paint in the brush, and not to let the colours run; to wash the brush clean. Drawing pictures of given subjects; comparing sizes, of, say, an adult and a child, a child and a tree, and drawing pictures involving this comparison. Pattern drawing involving dots, circles, lines and other shapes; how to find the middle of the paper; using flower shapes to fill the paper; using a few bright colours and later other shades.

Free painting and drawing. (80 *periods*)

(2) USING CLAY. Further shapes, pear, apple, spoon, dish, basket, cucumber. Combining shapes to make objects like mushrooms, cups,

a basket with fruit, a sled, a snowman, a little girl or boy, a rabbit with a carrot How to put on details and smooth them on (15 *out of the* 40 *periods for free modelling*)

(3) APPLIQUE Cutting paper. Flags, tickets and other small objects to be cut evenly by eye Correct use of scissors Cutting out a house or other rectangular shape by eye—a window, a door, walls, other shapes such as a roof, a ball, a carrot, an apple Using these simpler shapes to form more complex objects such as a lorry, an engine

Folding paper and cutting freely to make a symmetrical pattern

Towards the end of the year using different coloured paper and paste to make more complicated pictures, training the children to use paste and paste-rags (20 *periods*)

(4) MODEL MAKING Folding paper accurately, making model boats, hats, darts, making toys from folded and glued paper—doll's furniture, sleds, boxes and baskets

Using boxes and paper to make tables, divans and, with cardboard, wheels and windows

Develop in the children a conception of plane geometrical shapes—square, rectangle, circle, and triangle (20 *periods*)

Third group

(1) PAINTING AND DRAWING Drawing objects correctly from observation—arms coming from the shoulder, branches of a tree from the trunk Using the paper correctly Using half tones as well as main colours, pink, grey, violet, and using correct colours for objects Using brushes to make thin or thick lines (20 *periods*)

Subject drawing involving grouping of objects or objects in different relation to one another, one behind the other, or side by side Showing people doing things Showing an expanse of water, meadow or floor (20 *periods*)

Decorative or pattern drawing with paint or coloured pencils (20 *periods*) Free painting or drawing (20 *periods*)

(2) USING CLAY Extending knowledge of correct shape Making models of people (12–15 centimetres high) with attention to features, making models of animals, birds (20 *periods*)

Groups of models making a connected scene (10 *periods*) Free modelling (10 *periods*)

(3) APPLIQUE Continue practice of cutting out by eye, folding paper to make symmetrical patterns, using different coloured paper to make various objects Cutting pieces of varying sizes, and sticking them accurately Making pictures for special occasions, like fir trees for the new year Making whole scenes from cut-outs, and arranging them properly on the paper Learning the names of all the colours used Making anything they like with cut-outs (20 *periods*)

(4) MODEL MAKING. Toys made from paper and cardboard. Developing the child's spatial knowledge.

Doubling a piece of paper. Finding the centre of a square and folding the corners into it; making a cut by bending the folded square and gluing accurately; making a tube from a piece of paper. Making houses, boxes, a letter box, a boat. Sticking parts to a box—wheels to make a cart and similar toys; sticking boxes of various shapes together—to make, for example, a lorry. Shaping boxes to make angles needed for shapes like ships. (20 *periods*)

NATIVE LANGUAGE AND LEARNING ABOUT THE ENVIRONMENT

Group I (*Summary of syllabus*). The experience of learning about one's environment is linked with the development of language and the ability to find appropriate expressions.

The children should gradually be trained to express their questions and wishes so that they are clearly understood; to listen to the teacher and answer her questions; to tell about things that interest them and, with the help of the teacher, to tell little stories.

Children should be taught to use the correct grammatical forms of the words they most frequently use and to pronounce them clearly and correctly.

The teacher must help the children to know how the kindergarten is arranged, to be able to name the various articles used, to know about the garden, the trees and flowers.

The children should know the people who work in the kindergarten and respect their work—the cook, the doctor, the caretaker, the cleaners, the nurse and others who visit the kindergarten in various capacities.

The children should learn about nature; the seasons and their characteristics, local flowers and trees, animals and insects, the school garden and indoor flowers, plants and animals. They help to look after their own bulbs, aquarium and pets, and water the plants in the garden.

Literature should take an important place in the development of language; stories read and told to the children, poems recited and learnt and plenty of picture books to handle and treat with respect and care.

(A list of 21 folk tales, 6 classical stories and 19 Soviet stories for small children is recommended for reading aloud.)

During the period set aside each day for work with the group as a whole, it is suggested that the children learn something new—games introducing new words, singing games, a little talk about some experience the children have had, followed by questions which encourage the children to express themselves, or a short story that the children can act.

PRIMARY FORMS 1 TO 4

(Aged 7 to 11 years)

(From official syllabuses issued by the Ministry of Education RSFSR)

Syllabus in Arithmetic for the Primary Forms

The aim in teaching arithmetic in forms 1 to 4 is to train children to carry out processes with whole numbers correctly, consciously, with confidence and reason, and to use their knowledge and skills in solving arithmetical problems and in carrying out the simplest calculations.

The teaching of arithmetic in the school should be organised in such a way that number and measurement serve as a means of getting to know reality.

About half the time devoted to arithmetic both during lessons and for homework, should be used to teach children how to solve problems. This aspect of the arithmetic course is one of the most important: it develops reasoning power and oral expression, discrimination, the ability to see the relationship of quantities and to draw the right conclusion. Solving problems helps to prepare pupils for life.

At the end of the first year pupils should be able to write down the solution of a problem and the answer to a sum and to be able to explain these in answer to questions.

At the end of the second year, pupils should be able orally to state the problem, the steps needed for its solution and to write the processes correctly; they should be able to explain how they did it without questions from the teacher.

At the end of the third year pupils should be able to write shortly the data of a problem, independently formulate a method for its solution, write the solution with a written formulation of questions.

At the end of the fourth year pupils should be able to write the whole process of stating and solving a problem and to check their solution of simple problems.

A great deal of time must be spent on mental calculations. During the first two years pupils do their calculations only orally.

* * * *

Arithmetic develops quantitative relations with the real world. In order to give a correct reflection of these relations to the children, the teaching of arithmetic must be closely linked with life, with reality.

A child can only find the right process for the solution of a problem if he knows the relationship of the factors involved in the problem. Therefore the content of problems should be closely related to the

experience of the children themselves and the life around them; many supplementary problems must be made up on this basis by the teacher.

The children must also solve problems independently, at home, but only problems of a type already familiar to them.

Visual aids, practical work and instruments must be widely employed in the primary classes. The children must make their own measuring instruments, abacus, geometrical shapes and solids, as well as using those provided by the school. The making of models also develops the children's ability to use simple tools and to be neat-fingered.

ARITHMETIC SYLLABUS

Form 1

Counting to 10. Learning the figures up to 10. Addition and subtraction within 10. (64 *periods, including time for working examples and solving problems*)

Oral and written numeration up to 20. Addition and subtraction within 20. Addition tables. Increasing and decreasing numbers by several units. Multiplication within 20. Division into equal parts within 20. (96 *periods*) Oral and written numeration to 100. Addition and subtraction of complete tens up to 100. Multiplication and division of complete tens by units within 100. (20 *periods*)

Measures and measuring—the metre, centimetre, kilogramme, litre, the week and the number of days in it. (8 *periods*)

Recognising the square, rectangle, triangle and circle.

Problems. Solving one step problems, involving finding the sum, what is left, increasing or decreasing a number by several units, finding the product (when it is a case of adding the same number repeatedly), dividing into an equal number of parts. Solving problems with 2 steps.

Revision. (10 *periods*)

Form 2

Revision of work done in Form 1. (2 *periods*)

Addition and subtraction within 100. Comparing numbers by their difference. (40 *periods*)

Multiplication and division up to 100; introduction to division by inspection; multiplication and division tables. (72 *periods*)

Increasing a number several times; decreasing a number several times; comparison of numbers by 'so many times bigger'. (15 *periods*)

Multiplication and division within 100 outside the tables. (25 *periods*)

Oral and written numeration to 1,000. The four rules with complete hundreds up to 1,000, using oral methods of counting. (12 *periods*)

Measures and measuring. Measurements of length—kilometre, metre, centimetre; Weight—kilogram, gram. Time—year, month, day, hour, minute. (10 *periods*)

The straight line. Segment of a straight line and its measurement.

Problems. Solving simple problems involving comparison by difference, division by inspection, increasing and decreasing numbers several times, finding parts of numbers, comparing by 'how many times bigger'.

Solving complex problems of 2 or 3 steps.

Revision. (12 *periods*)

Form 3

Revision of work done in Form 2. (12 *periods*)

Four rules with complete tens and hundreds up to 1,000; addition and subtraction with 3 figures; multiplication of 2 figures and 3 figures by one figure; 'table' division within 100 with remainder; division of 3 figures by one figure. (44 *periods*)

Oral and written numeration of large numbers up to a million; addition and subtraction; multiplication and division of large numbers by one, 2 or 3 figures.

Addition and subtraction on the abacus.

The names of the component parts of arithmetical processes. Checking processes. Order of operations with simple examples of brackets. (94 *periods*)

Measures and measuring. Table of length—kilometre, metre, decimetre, centimetre, millimetre. Table of weight—ton, kilogram, centigram, gram. Table of time—century, year, month, day, hour, minute, second. (9 *periods*)

Geometrical material. Measurement of segments. Simple measurement of the locality.

Practising measurement and judgment by eye.

The sides and angles of a square and rectangle. Drawing a right angle, a square and rectangle with ruler and set square. (8 *periods*)

Oral calculations—quick working up to 100 and with round numbers up to 1,000. Using 'rounding' and alternatives of addition and multiplication in mental calculation.

Problems. Simple and complex problems of from two to five steps closely linked with the practice of arithmetical processes. Simple rule of three problems, proportional division, finding an unknown from two differences. (19 *periods*)

Revision. (12 *periods*)

Form 4

Revision of work done in Form 3. (12 *periods*)

Numeration of large numbers including millions and milliards. Classification. Addition and subtraction of large numbers; the interchangeable properties of addition; the relationship between the terms of addition and subtraction; checking addition and subtraction.

Addition and subtraction on the abacus. Multiplication and division of large numbers; the interchangeable properties of multiplication; the relation between the terms of multiplication and division; checking multiplication and division; order of arithmetical operations.

Revision. (44 *periods*)

Complex concrete numbers. A simple and compound concrete number. Dividing up and converting concrete numbers in the metric system. The four rules with the metric system. Problems. (24 *periods*)

Geometrical material. Area. Units of measurement for area. Finding the area of a rectangle and square. Table of square measure. Are and hectare. Problems on area. Constructing a right angle, square and rectangle. (14 *periods*)

Volume. The cube—surface, edge and corner of a cube. Cube as a unit of measurement of volume. Calculating the volume of solids shaped like prisms (a room, a box). Table of cubic measure. Problems on volume. (14 *periods*)

Time. Revision. Fractional aspects. Four rules with tables of time (simple examples). Problems involving calculations with days, years and centuries (only involving complete years). (26 *periods*)

Simple fractions—$\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{5}$, $\frac{1}{10}$. The form of a fraction. Numerator and denominator. The changing of fractions. Addition and subtraction of fractions with the same denominator and with an L.C.M. Problems finding parts of numbers. (20 *periods*)

Oral calculations. Quick calculations within 100 and with round numbers up to 1,000. Simple examples of continuous multiplication and division (by 2, 4, 8, etc.). Shortened multiplication by 5, 50, 25.

Problems. Complex problems with two to six steps involving arithmetical processes. Finding the average. Ratio. Finding two numbers by their sum and ratio. (15 *periods*)

Revision. (29 *periods*)

Russian Language in Forms 1 to 4 (*abridged*)

The teaching of the Russian language in the primary forms aims at enabling the children to read correctly and with understanding and to express their ideas fluently and grammatically, both orally and in writing. The syllabus is divided into two parts, 'Reading and the development of speech', and 'Grammar and writing. The development of speech.' The first half-year is devoted to learning to read.

Reading lists are given for each form and the teacher guides and

checks the reading which is done at home or after lessons. The third and fourth forms have occasional discussions on books after school hours.

Form 1 *'Alphabet' stage.*

READING AND SPEECH DEVELOPMENT. (76 *periods*)
Understanding how to recognise a sentence. Splitting a sentence into words, words into syllables and sounds; sounds put together to make syllables and words. Practical work on the main sounds (vowels, hard and soft consonants) and the letters belonging to them.

Making words from letters and syllables. Reading

(*a*) words made from simple, inverted and closed syllables;
(*b*) words containing syllables with hard and soft consonants;
(*c*) words containing syllables with consonants together. Reading aloud short, easy texts, with understanding, correctly and fluently by syllables. Reading texts in handwriting from the text books.

Complete answers to questions about the material read, about stories told by the teacher or pictures. Making a pause at a full stop.

Learning poems off by heart after choosing them with the teacher and reading them with expression.

Retelling a story by answering questions asked by the teacher. Telling stories.

First half year

WRITING (76 *periods*) Writing words to dictation (only words written as they are pronounced) and sentences made up from such words. Copying from the board and from books, words and sentences in both printed and written forms.

Second half year

READING AND SPEECH DEVELOPMENT Reading small easy texts correctly (without mispronouncing words or repeating the syllables), with understanding, fluently, accurately, sufficiently loudly. Transition to fluent reading, without dividing into syllables, of easily sounded words. Reading a preposition joined to the word belonging to it.

Silent reading of a simple text with the aim of finding the answer to a question from the teacher.

Explanation of words and expressions in preparation for their use in reading and speech.

Complete answers to questions on the content of reading matter.

Ability to describe in words or draw a picture of a text or story and also to act it. Pause and intonation for meaning. Use of punctuation

marks (full stop, question mark, exclamation mark). Learning poems by heart and reciting.

Retelling easy texts, description of pictures, telling stories.

Oral observations on nature and the weather; on games and lessons.

Out-of-school reading. Simple tales for children.

Suggested list of poems for learning by heart:

A. Pleschchev. *Autumn, Bird, Mother and Children.*
A. Pushkin. Extracts from *Stories of Tsar Saltan, The fir in the forest, the squirrel under the fir.*
V. Mayakovsky. *What is 'good' and what is 'bad'.*
S. Mikhailov. *Fir tree.*
S. Marshak. *Postman.*

GRAMMAR AND WRITING. DEVELOPMENT OF SPEECH.

1. Sentence. Full stop. Capitals. (8 *periods*)

Division of sentence into words. Words answering Who? What? What kind? What is he doing? What are they doing? (8 *periods*)

Capitals for names of people and nicknames of animals. (6 *periods*)

2. Division of words into syllables Change of words by syllables. (6 *periods*)

3. Sounds of vowels and consonants—finding these in words. Finding the accented syllable in a two-syllable word.

Hard and soft consonants and simple variations.

Writing words which are written as they are pronounced. (14 *periods*)

Using certain Russian letters and combinations of letters.

(10 *periods*)

4. Answering in complete sentences (during the year learning to write them). Collective compositions and discussions. (17 *periods*)

5. Revision at the end of the year. (6 *periods*)

6. A list of thirty-five words to be mastered during the year, and which do not come within the rules.

* * *

Forms 2, 3 *and* 4 continue on similar lines and at the end of the syllabus there are reading lists for each form. Form 1 has a list of twenty-five books of fairy tales and folk tales, fifteen pre-revolutionary stories, sixty-four Soviet stories and twelve translations from abroad (including Grimm and Perranet). Form 2 has a list of ten fairy and

folk tales, fourteen pre-revolutionary stories, fifty-eight Soviet stories and fifteen translations from abroad (including *Aladdin*, *Ali Baba*, Hans Andersen, and Chinese, Polish, Hungarian and other tales).

The list for Form 3 contains sixteen fairy and folk tales, thirty pre-revolutionary stories, seventy-six Soviet books and sixteen translations from abroad (including Hugo's 'Gavroche', Hans Andersen, Jack London).

The list for Form 4 contains eight fairy and folk tales, thirty-six pre-revolutionary titles, one hundred and thirty-six Soviet titles and fourteen translations from abroad (including *Robinson Crusoe*, extracts from *Great Expectations*, *Gulliver's Travels*, *Tom Sawyer*, *Huckleberry Finn*).

Form 4 Geography (*abridged*)

Plan. (5 *periods*) Distance and direction. Scale. Symbols. Plan of classroom and school garden.

The Globe. (9 *periods*) The earth is a globe. The globe and map of hemisphere. Parts of the world and the oceans. First journey round the world. Hot, temperate and cold countries. Travels of Miklukho-Maklaya in the hot countries Soviet scientists of the drifting icebergs.

Seas of the USSR. (4 *periods*)

Surface of the USSR. (3 *periods*)

Rivers and lakes of the USSR. (7 *periods*)

Maps of flora and fauna, industries and natural zones. (28 *periods*)

Moscow—capital of the USSR. (4 *periods*)

Practical work

1. Rectangular plan with use of scale (classroom, etc).
2. Reading plans—school garden, a hilly place.
3. Reading the globe, physical maps of the hemispheres, physical map of the USSR. Natural zones of the USSR.
4. Finding places and regions on the map.

Excursions

1. To study the natural features of the locality.
2. A visit to a collective or state farm.
3. A visit to a factory.
4. To study local transport.

Form 4 History of the USSR. (66 *periods*) (*abridged*)

1. The old Russian (Kiev) state.
2. The period of the division of our country.
3. The forming of a Russian national state.

4. The extension of the Russian state.
5. The peasant wars and the rebellions of the oppressed peoples in the seventeenth century.
7. Tsarist Russia in the first half of the nineteenth century.
8. The growth of capitalism in Russia.
9. The first bourgeois-democratic revolution in Russia.
10. The second bourgeois-democratic revolution in Russia.
11. The great October socialist revolution.
12. Intervention. Civil war.
13. The restoration of national economy. The foundation of the USSR.
14. The USSR—the country of socialism.
15. The great patriotic war 1841–5.
16. The USSR after the war.

Natural Science

In the primary forms the children receive an introduction to living and non-living things and the relationship between different aspects of nature. They learn about plants and animals through talks by the teacher, who shows how people master nature in their own interests and tells them some facts about the great Russian scientist, I. V. Michurin. The teacher explains the harm done by superstition in relation to natural phenomena.

The first three forms do not study natural science as a separate subject, but acquire their knowledge through their reading and language lessons and through practical observation of plants and animals, work in the school garden and excursions. By these means each form must become familiar with certain topics.

Form 1. The seasons and what happens in each—weather, plants, animals. Domestic animals and hare, fox, bear; birds; where these animals and birds live and what they feed on.

Form 2. The vegetable garden and vegetables. Weeds and how to get rid of them. Animals who spoil vegetables and how to deal with them. Autumn work in the vegetable garden.

Parts of the plant—root, stem, leaves, flowers, fruits and seeds, and which are edible.

Animals—horse, hen, hare, fox, wolf, bear; wintering birds (tits, crow, sparrow, jackdaw), their appearance and food.

The forest—the trees and shrubs and their peculiarities, deciduous and coniferous trees, animal inhabitants (squirrel, hedgehog, woodpecker). Use of and planting of forests.

Form 3. The field and the most important crops (rye, oats, wheat, clover, potato, flax, sugar beet, cotton). Weeds and how to get rid of them. Work of machines on collective farm fields. Pupils must be

familiar with three or four local field crops and know their stem, root, leaf, fruit and how they are used by man.

Animals (cow, pig, sheep, rabbit, goose; whale, white bear, seal; grass-snake, adder, frog; one or two local fish). Quarters for domestic animals and how to feed and look after them; their use to man.

Orchard—fruit trees (apple, pear) and fruit bushes (currants, raspberry, gooseberry); the strawberry. Birds useful to fruit trees (tit, starling).

An introduction to hygiene is given in the first 3 forms; how to have a proper regime for the day; how to sit correctly; wash hands, face, body, care of the teeth; care of nails and hair; care of clothes and footwear; care of the sight; care of classroom and rooms at home; ventilation; morning exercises; playing in the fresh air; proper food; prevention of contagious and infectious illnesses.

Children in these forms keep nature diaries (weather, changing vegetation with the seasons and changing work in this connection) Form 1 should go on an outing once or twice each season. Form 2 should visit a vegetable garden, a wood, a woodwork shop, a building site. Form 3 should visit a collective farm field, a machine-tractor station, a dairy, an orchard. Discussions in these forms should take place on the basis of material collected on these outings, such as leaves, twigs, weeds, plants, grain, etc.

All children should take part in bird days and garden weeks.

Form 4—Water. (14 *periods*) Water in nature Evaporation and condensation according to temperature The thermometer Three states of water and the change from one to another. Man's use of water power and steam. Solubility of substances in water Solubility and insolubility of substances. Drinking water, its purification. The water cycle in nature. Experiments—evaporation and condensation, change from one condition to another; solubility, filtering.

Air. (12 *periods*) Air occupies space. Elasticity of air. Expansion and contraction of air according to temperature. Weight of air. Warm air is lighter than cold air Movement of air, wind. Using the force of the wind. Experiments—air occupies space, expansion and contraction of air, resilience of air, movement of air in changing temperature.

Useful minerals. (20 *periods*) Granite and destruction of granite; sand and clay. Ordinary limestone, chalk, marble, lime, cooking salt Peat. Coal. Oil. Iron ore. Metals (iron, cast iron, steel, aluminium). The outward appearance and use of these minerals. Experiments—expansion and contraction of hard bodies in changing temperatures The breaking up of a bit of granite with rapid cooling after great heat. Excursions to mines or factories, metal work shop or blacksmith's.

Soil. (10 *periods*) Composition of soil (using local examples). Layers of soil; clay, sand and 'black earth' soil. The importance and methods

of working soil. Fertilising. Visit to see strata in soil. Experiments to find the components of soil.

Care of the health. (10 *periods*) Plan of the day. How to develop strong muscles. How to grow up strong. How to look after and strengthen the heart. Need to breathe clean, fresh air. Why smoking is bad. The battle against dust. Proper food. How to avoid infectious diseases (omit tuberculosis). How to have good teeth. Hygiene of the skin.

(Here follows a list of 77 stories and articles on the above topics to be read and discussed by and with Form 4.)

Physical Education Syllabus

Explanatory Note

Physical training is an integral part of the Communist education of school-children, and assists their all-round development.

The basic objects of physical education in the primary school are: to improve the health and ensure the correct physical development of the children to make them hardy; to teach the children the habits and skills required for the basic forms of gymnastics, sport and games prescribed in the syllabus, and to develop in them agility, speed, strength and endurance (to the degree suitable to their age); to accustom the children to habits of personal and social hygiene.

Physical education lessons should help to train the children to be bold and to be disciplined, and should develop their sense of friendship and comradeship.

The material contained in the physical education syllabus falls into the following sub-divisions:

1. Basic elements of drill formation Gymnastic formations and reformations.
2. Exercises for all-round development, preparatory exercises.
3. Walking and running.
4. Jumping.
5. Throwing.
6. Climbing, both *up* and *over*.
7. Balance.
8. Active games.

The syllabus for forms 3 and 4 differs from the preceding two only in the more complex nature of the exercises laid down for each of the above sub-divisions, and in the introduction, from the third form onwards, of the raising and carrying of weights and of skiing training. The syllabus for forms 3 and 4 lays down standards for jumping, throwing and skiing training.

In classes in physical education, teachers must take into consideration the specific features of the organism of girls. The demands made on girls differ from those for boys as regards the depth, height and length of jumps, the distances to be covered on skis, and the weights they are expected to lift and carry.

The sixty-six teaching periods per year to be devoted to physical education in forms 1 to 4 are as follows:

Section of Syllabus	*Form* 1	*Form* 2	*Form* 3	*Form* 4
1. Gymnastics and games	66	66	36	36
2. Skiing training	–	—	12	12
3. Athletics	—	—	18	18

In the general scheme of physical education lessons in the primary school a large place should be assigned to games (details of the games recommended are given in the appendix to each syllabus).

A considerable proportion of the physical education lessons in the autumn and spring should in all schools be held in the outside playground. If the weather is suitable, classes should be taken outside during the winter too Lessons with children of forms 1 and 2 may be taken outside at temperatures no lower than 8 degrees of frost, and without strong wind, and with children of forms 3 and 4 at temperatures not lower than 10 degrees of frost (this applies to the central climatic belt of the RSFSR).

It is very important that children should carry out systematically at home exercises which they have mastered thoroughly in class. Class work in physical education should be supplemented by after school physical culture and sports activities carried on at the school, in the Pioneer houses, children's parks, Pioneer camps, etc. Exemption from physical education is permitted only on certificate from the school doctor.

Systematic medical examination of the physical development of the children must be provided for in the school, in accordance with the decree on the medical examination of all persons engaging in physical education and sport, approved by the USSR Ministry of Health on October

(The syllabuses for the four primary forms give in detail what is outlined here.)

SYLLABUSES FOR FORMS 5 TO 10

History (*abridged*)

Form 5 (66 *periods*)

Introduction. (2 *periods*)

1. Life of the first men. (4 *periods*)

2. The Ancient East. (24 *periods*) (*a*) Ancient Egypt (10 *periods*), (*b*) Mesopotamia in ancient times, (*c*) Urartu, (*d*) Ancient Persia, (*e*) Ancient India, (*f*) Ancient China.

3. Ancient Greece. (32 *periods*) (*a*) Very ancient Greece, (*b*) the most important Greek states in the eighth to sixth centuries B.C., (*c*) the northern Black Sea area in the seventh of fifth centuries B.C., (*d*) Greek-Persian wars. The might and fall of Athens, (*e*) Greek culture in the fifth and fourth centuries B.C., (*f*) the fall of Greece. The state of Alexander of Macedon and his downfall.

Revision. (4 *periods*)

Form 6 (*abridged*)

1. Ancient Rome. (33 *periods*) (*a*) The rise and eminence of the Roman slave republic, (*b*) the aggravation of the class struggle in Rome and the downfall of the Roman republic, (*c*) the Roman Empire from the first to the beginning of the second century A.D., (*d*) the crisis and fall of the western empire of Rome.

Revision. (3 *periods*)

2. The Establishment of the Feudal System. (29 *periods*) (*a*) The Germans and the Slavs; the fall of the western empire of Rome, (*b*) the eastern empire of Rome and the Slavs, (*c*) the establishment of feudalism in Europe, (*d*) the establishment of feudalism in the East.

Revision. (4 *periods*)

Form 7 (66 *periods*) (*abridged*)

1. The strengthening and further development of feudalism; the organisation of centralised states. (35 *periods*) (*a*) The growth of crafts and trade; the growth of towns, (*b*) the Crusades, (*c*) the Mongolian invasion, (*d*) the organisation of centralised States in Europe, (*e*) the attack of the German feudal lords on the east and its failure, (*f*) the fight against German dominance and the peasant wars in Czechoslovakia, (*g*) the Turkish conquests, (*h*) the culture of Western Europe in the twelfth and thirteenth centuries, (*i*) the beginnings of the bourgeoisie and bourgeois culture.

2. The beginning of the decay of feudalism and the emergence of capitalist relationship. (27 *periods*) (*a*) Geographical discoveries from the end of the fifteenth to the beginning of the sixteenth centuries,

(*b*) the Reformation and peasant wars in Germany, (*c*) the absolute monarchy in France, (*d*) England in the sixteenth and early seventeenth centuries, (*e*) the bourgeois revolution in the Netherlands, (*f*) Eastern Europe in the sixteenth and the first half of the seventeenth centuries, (*g*) China in the fourteenth to seventeenth centuries, (*h*) Culture in the sixteenth and seventeenth centuries.

Revision. (4 *periods*)

History of the USSR

Form 8 (66 *periods*)

Introduction. (1 *period*)
Primitive society and slave society in the territory of our country.
The Slav in ancient time. (8 *periods*)
The rise of the feudal system. Kiev Russ. (9 *periods*)
The feudal splitting up of Eastern Europe, Trans-Caucasia and Central Asia. (12 *periods*)
The organisation of a Russian centralised multi-national-state. (11 *periods*)
The peasant wars and the revolt of the oppressed peoples in the seventeenth century. The strengthening of the autocracy in Russia. (17 *periods*)
Revision. (8 *periods*)

Form 9 (74 *periods*)

The founding of the Russian Empire and the further development of serfdom. (12 *periods*)
The decline of serfdom and the development of capitalist relations in Russia. (20 *periods*)
The crisis of the serf system. The beginning of the industrial revolution in Russia. (10 *periods*)
The period of consolidation of capitalism in Russia. (26 *periods*)
Revision. (7 *periods*)

Form 10 (132 *periods*)

The period of imperialism. The bourgeois-democratic revolution in Russia. (27 *periods*)
The great October socialist revolution. (19 *periods*)
Foreign armed intervention and the civil war (11 *periods*)
The reconstruction of the national economy. The strengthening of the Soviet multi-national state (6 *periods*)
The transition to the socialist reconstruction of the national economy.
The victory of socialism in the USSR (12 *periods*)

The USSR in the period of completing socialist construction and the gradual transition from socialism to communism (6 *periods*)

The great patriotic war of the Soviet Union (10 *periods*)
The reconstruction of the national economy and its further development in the post-war period. The struggle of the Soviet people for the building of Communism. (11 *periods*)
Revision. (30 *periods*)

In forms 8 and 9, on completing the section on the history of the USSR, a course in Modern History is studied.

Form 8 (66 *periods*) (*abridged*)

1. The beginning of modern times (1642–1789). (13 *periods*) (*a*) The English bourgeois revolution of the seventeenth century, (*b*) the enslaving of India by England. The beginning of the industrial revolution in England, (*c*) War of Independence in North America, (*d*) the feudal order on the European continent. France from the middle of the seventeenth century to the middle of the eighteenth century.
2. Europe from the end of the thirteenth to the beginning of the nineteenth century. (14 *periods*) (*a*) The French bourgeois revolution in the eighteenth century. (*b*) Europe from 1794 to 1815.
3. From the Vienna Congress until the revolution of 1848. (19 *periods*). (*a*) The Vienna Congress; the Holy Alliance; the revolutionary movement in the 1820s, (*b*) France from 1815 to 1848, (*c*) England from 1815 to 1848, (*d*) Utopian socialism, (*e*) the rise of scientific Communism; K. Marx and F. Engels (up to 1848), (*f*) the revolution of 1848 in France, (*g*) the revolution of 1848 in Germany, (*h*) the revolution of 1848 in the multi-national Austrian Empire.
4. 1850–60. (15 *periods*) (*a*) The Crimean War. England and India 1850–60, (*b*) The Civil War in North America, (*c*) China in the eighteenth and nineteenth centuries, (*d*) the unification of Italy, (*e*) the unification of Germany, (*f*) the First International from its inception in 1864 until 1870.

Revision. (5 *periods*)

Form 9 (58 *periods*) (*abridged*)

1. The Franco-Prussian War and the Paris Commune. (7 *periods*) (*a*) The Franco-Prussian War 1870–1, (*b*) the Paris Commune.
2. Germany at the end of the nineteenth and the beginning of the twentieth century. (6 *periods*)
3. England at the end of the nineteenth and the beginning of the twentieth century. (5 *periods*)
4. France at the end of the nineteenth and the beginning of the twentieth century. (4 *periods*)

5. The Slav peoples of Western Europe and the Balkans 1871–1914. (4 *periods*)
6. The U.S.A. at the end of the nineteenth and the beginning of the twentieth century. (6 *periods*)
7. China at the end of the nineteenth and the beginning of the twentieth century. (3 *periods*)
8. The international working class movement and the Second International. (4 *periods*)
9. Imperialism as the highest and last stage of capitalism. (3 *periods*)
10. International relations at the end of the nineteenth and beginning of twentieth centuries. (2 *periods*)
11. The first world war 1914–18. (10 *periods*)

Revision. (5 *periods*)

The Syllabus for Foreign Languages (English, French and German)

has an introduction which begins by giving the aim as 'teaching the pupils to read, understand and translate with the aid of a dictionary original foreign texts of average difficulty and also giving them the basis for speaking in the foreign language'.

In forms 5 to 7 the texts used for studying a foreign language deal with schoolchildren's life in town and country; the life of the workers and children in the USSR and foreign countries; revolutionary anniversaries and heroic events of the past and present in the USSR. In forms 8 to 10 original texts are used to give the pupils an idea of the lives of the people in the country of the language being studied.

The outline in the introduction for all three languages is given under the headings: vocabulary, grammar, phonetics, spelling and rules for reading, reading, translation, oral work, written work, homework and out-of-school work.

The syllabuses are given under the headings of vocabulary, grammar (morphology and syntax), phonetics, rules for reading (the alphabet, etc.), rules for spelling.

The following extracts give a general idea of the construction of the syllabuses:

ENGLISH. *Form* 5 (132 *periods*)

1. *Vocabulary.* Names of objects (a book, a pencil), qualities (red, good), actions (to play, to read).

   The article, auxiliary verbs, prepositions, conjunctions. Simple words (a boy, a girl); words formed by using the suffix -er (a teacher); compound words (a skating-rink, a blackboard); verbs (stand up, sit down). 350 words.

2. *Grammar.* (*a*) Morphology—the noun and its cases, (*b*) adjective, (*c*) numbers to 20, (*d*) preposition, (*e*) pronoun, (*f*) verb, (*g*) conjunction.

NOTE: Each section has a detailed list under each sub-heading. (*b*) Syntax. The sentence, order of words, types of sentence, main parts of a sentence, subject and predicate, clauses.

3. *Phonetics.* Comparison of Russian with English phonetic system, accented syllables, intonation, transcription.
4. *Rules for Reading.* Alphabet, names of letters, combinations of letters, unpronounced letters.
5. *Rules of Spelling and Writing.* Capital and small letters. Plurals of nouns ending in y and o. Verbs in 'present indefinite tense' ending in y and o. Division of words into syllables.

FRENCH. *Form* 7 (99 *periods*)

1. *Vocabulary.* Revision of former words and learning 1,075 new words.
2. *Grammar.* (*a*) Morphology—noun, noun formed with suffix. Suffix giving profession -eur, -euse, -iste. Suffix -ment, -tion, -té, -eur. Article—systematic revision. Adjective -eux, -al, in. Plural of adjectives ending in -al. Systematic study of feminine forms of adjectives. Numeration. Verb—*passé simple* of verbs of groups 1, 2 and 3 included in vocabulary. Use of this tense. *Plus—que—parfait. Gerundive Participe passé.* Passive form and its simple tenses. Complete knowledge of indicative mood. Pronoun. Use of qui and que. Adverb en and y, -ment Adjective used adverbially. Preposition par with *participe passé* with active and passive verbs. Parmi, en, conjunction que. (*b*) Syntax. Simple sentence with conjunctions and ou. Compound sentences with et and mais. Use of parce-que, quand, pourquoi? Using verbs in passive form.

NOTE: The whole question of foreign language teaching is under a thorough review and both syllabuses and methods are undergoing serious discussion with a view to improvement.

Geography Syllabus

Form 5 PHYSICAL GEOGRAPHY. (99 *periods*)

Introduction, with practical work. Observations of temperature, clouds, rain, snow, etc. (2 *periods*)
Plans and maps. (16 *periods, including* 9 *of practical work*)
Land surfaces. (9 *periods, including* 3 *of practical work*)
Water on the earth. (13 *periods, including* 3 *of practical work*)

Shape and movement of the earth; map network. (14 *periods, including* 3 *of practical work*)
Weather and climate. (15 *periods, including* 4 *of practical work*)
Changes in the earth's surface. (12 *periods, including* 2 *of practical work*)
The natural zones; the population of the earth. (14 *periods, including* 3 *of practical work*)

Form 6 PHYSICAL GEOGRAPHY OF THE CONTINENTS. (66 *periods*)
Introduction. (1 *period*)
Europe: General outline. (14 *periods, including* 4 *of practical work*)
Population and political map. (4 *periods, including* 1 *of practical work*)
Asia: General outline (12 *periods, including* 5 *of practical work*) The population and political map. (4 *periods, including* 1 *of practical work*)
Africa. (7 *periods, including* 1 *of practical work*)
America: General outline. (11 *periods, including* 2 *of practical work*)
Australia. (4 *periods, including* 1 *of practical work*).
Antarctica. (1 *period*)
Excursions. (2 *periods*)

Form 7 GEOGRAPHY OF THE USSR. (99 *periods*)

Form 8 ECONOMIC GEOGRAPHY OF THE USSR. (99 *periods*)

Form 9 ECONOMIC GEOGRAPHY OF FOREIGN COUNTRIES (82 *periods*).
Europe: Poland, Czechoslovakia, Hungary, Rumania, Bulgaria, Albania, Yugoslavia, Germany, Great Britain, Greece, Italy, Spain, the Scandinavian countries. Asia. North and South America. Africa.

Biology

Form 5 BOTANY. (66 *periods*)
Introduction. (1 *period*)
1. Plants in nature and in agriculture. (4 *periods*)
2. The cell structure of plants. (3 *periods*)
3. Seeds. Sowing. Germination. (14 *periods*)
4. The root. Feeding from the soil. (10 *periods*)
5. The leaf. The formation of organic matter in plants. (8 *periods*)
6. The stem. The movement of plants—storage of food. (9 *periods*)
7. Propagation of plants. (14 *periods*)
8. The plant—a living organism. (3 *periods*)

Form 6 BOTANY. (66 *periods*)
Discussing the summer work of the pupils. (2 *periods*)
Conditions for cultivating crops. (9 *periods*)

2. Various crops and their cultivation—Potatoes, cabbages, wheat, maize, flax, apple trees. (21 *periods*)
3. Michurin's development of new kinds of crops. (5 *periods*)
4. The main groups of plants. (26 *periods*)
5. General picture of the plant world. (2 *periods*)

Form 7 ZOOLOGY. (66 *periods*)

Discussion on summer work of the pupils. (2 *periods*)

1. Vertebrates: Fish. (8 *periods*) Amphibians. (5 *periods*) Reptiles. (4 *periods*) Birds. (15 *periods*) Mammals. (15 *periods*)
2. Domestic animals. (11 *periods*)
3. Conclusions. (6 *periods*)

Form 8 THE ANATOMY AND PHYSIOLOGY OF MAN. (66 *periods*)

Introduction. (1 *period*)

1. The organism—a single entity. (6 *periods*)
2. Bone-muscle system. (6 *periods*)
3. Circulation of the blood. (9 *periods*)
4. Respiratory organs. (5 *periods*)
5. Digestive system. (8 *periods*)
6. Metabolism. (5 *periods*)
7. Excretory glands. (2 *periods*)
8. Skin. (2 *periods*)
9. Internal secretory glands. (2 *periods*)
10. Nervous system. (16 *periods*)
11. Physiological characteristics of a growing organism. (2 *periods*)

Form 9 THE PRINCIPLES OF DARWINISM. (50 *periods*)

Introduction. (2 *periods*)

1. The struggle for the idea of evolution before C. Darwin. (3 *periods*)
2. The revolution in science caused by the theories of C. Darwin. (14 *periods*)
3. The achievements of the Russian followers of Darwin. (8 *periods*)
4. The work of I. V. Michurin as a further stage in the development of biological sciences. (18 *periods*)
5. The Origin of Man. (5 *periods*)

For each form there is a list of practical experiments to be carried out and visits to be made in connection with each topic. The school plot is used for many of the experiments. There are also detailed notes on each topic.

Physics Syllabus

Form 6 (68 *periods*)

Introduction. (1 *period*)

1. First introduction to mechanics (56 *periods*), (*a*) measurement of

length, area and volume, (*b*) gravity, (*c*) weight, (*d*) measurement of force, (*e*) pressure, (*f*) upthrust of liquids; (*g*) moving bodies; (*h*) work and power, (*i*) simple machines, (*j*) energy.
Two excursions. (6 *periods*) Revision. (5 *periods*)

Form 7 (102 *periods*)

1. Heat. Introduction (1 *period*), (*a*) expansion of solids (4 *periods*), (*b*) transference of heat (3 *periods*), (*c*) measurement of quantity of heat (10 *periods*), (*d*) change of state (5 *periods*), (*e*) heat energy.
2. Electricity. First introduction to electricity (4 *periods*), (*a*) the electric current (6 *periods*), (*b*) voltage, resistance and current (15 *periods*), (*c*) work and power of electric current (7 *periods*), (*d*) electromagnetism (24 *periods*).

Two excursions. (6 *periods*) Revision. (9 *periods*)

Form 8 (102 *periods*)

1. Mechanics. (*a*) Straight line accelerated motion (10 *periods*), (*b*) constant velocity (16 *periods*), (*c*) inertia, composition and resolution of forces (18 *periods*), (*d*) forces, mass and acceleration (10 *periods*), (*e*) interaction of bodies (10 *periods*), (*f*) kinetic and potential energy (17 *periods*).
   Practical work. (10 *periods*)
   Two excursions. (6 *periods*)

Revision. (5 *periods*)

Form 9 (136 *periods*)

1. Continuation of mechanics. (*a*) Circular and parabolic motion (17 *periods*), (*b*) oscillation and waves (11 *periods*), (*c*) sound (6 *periods*), (*d*) movement of liquids and gases (9 *periods*).
2. Molecular physics and heat. (*a*) Basic molecular theory—kinetic theory of the structure of matter (3 *periods*), (*b*) heat and work (10 *periods*), (*c*) expansion of solids when heated (4 *periods*), (*d*) properties of gases (12 *periods*), (*e*) properties of liquids (6 *periods*), (*f*) properties of solid bodies (8 *periods*), (*g*) change of state (18 *periods*), (*h*) efficiency of heat machines (10 *periods*)
   Practical work. (10 *periods*)
   Two excursions. (6 *periods*)
   Revision. (6 *periods*)

Form 10 (165 *periods*)

1. Electricity. (*a*) Electric charge and electric field (17 *periods*), (*b*) direct current (29 *periods*), (*c*) magnetic field and electro-magnetic induction (11 *periods*).

2. Vibratory motion and waves. Sound. (*a*) Vibration and waves (11 *periods*), (*b*) Sound (6 *periods*).
3. Alternating current, electro-magnetic oscillation and waves. (*a*) Alternating electric current (16 *periods*), (*b*) electromagnetic oscillation and waves (10 *periods*).
4. Optics and the structure of the atom. (*a*) Diffusion of light (5 *periods*), (*b*) reflection and refraction of light (10 *periods*), (*c*) optical apparatus (5 *periods*), (*d*) wave properties of light (9 *periods*), (*e*) action of light (5 *periods*), (*f*) structure of the atom (8 *periods*). Practical work. (6 *periods*) One excursion. (3 *periods*) Revision. (14 *periods*)

Astronomy Syllabus

Form 10 (34 *periods*)

Introduction. (1 *period*)

1. Daily and yearly change in the appearance of the stars. Movement of the earth. Practical application of astronomy. (9 *periods*) Observation. (2 *periods*)
2. The chief methods used in astronomy. (4 *periods*)
3. The solar system. (8 *periods*) Observation. (1 *period*)
4. Stars, the stellar system and the structure of the Universe. (4 *periods*) Observation. (1 *period*)
5. The origin and development of celestial bodies. (2 *periods*) Revision. (2 *periods*)

Chemistry Syllabus

Form 7 (66 *periods*)

1. Substances and their chemical changes. (8 *periods*)
2. Atoms, chemical elements. The fundamental laws of chemistry. (14 *periods*)
3. Oxygen. Air. Combustion. (8 *periods*)
4. Hydrogen. Water. Valency. (15 *periods*)
5. Oxides, bases, acids and salts. (21 *periods*)

Form 8 (66 *periods*)

Revision. Gram-atom. Gram-molecule.
Simple calculations based on formulae and equations. (16 *periods, including* 4 *for practical work*)

1. Alkali metals. (6 *periods*)
2. Halogens (18 *periods, including* 4 *for practical work*)
3. Oxygen and sulphur. (26 *periods, including* 8 *for practical work*)

Form 9 (99 *periods*)

Revision. (6 *periods*)

1. The periodic law and periodic system of the chemical elements of D. I. Mendeleyev. The structure of matter and formation of compounds in the light of electron theory of matter.

2. Nitrogen and phosphorus. (44 *periods, including* 11 *for practical work*)

3. Carbon and silicon. (23 *periods, including* 5 *periods for practical work*)

Form 10 (115 *periods*)

1. Organic substances (21 *periods, including* 4 *periods for practical work*)

Carbohydrates

Grape sugar, beet sugar, starch and its formation in plants, photosynthesis. Technology of starch. Cellulose. Hydrolysis of cellulose. Artificial silk, nitrocelluloses and their applications. Nitrogen content of organic substances. Nitrogen-compounds. Nitrobenzol. Trinitrobenzol. Amines. Aniline.

Proteins and their properties. Protein solutions as colloids. Proteins in living matter. Hydrolysis of proteins. Amino-acids.

2. Silicon. (6 *periods*)

3. Periodic law and periodic system of chemical elements of D. I. Mendeleyev. Structure of atoms treated more fully. (23 *periods*)

4. The essentials of the theory of electrolytic dissociation. (10 *periods*)

5. Metals. (38 *periods, including* 6 *for practical works*)

Alkali metals. Alkaline earth metal. Aluminium. Iron.

6. Review of elements in groups of the periodic system. (17 *periods, including* 6 *for practical work*)

Practical Work in the School Workshops and the School Experimental Plot for Forms 5 to 7

Form 5 WOOD AND METAL WORK (*abridged*)

Introduction. (1 *period*)

1. Working with wood. (12 *periods*) Distinguishing pine, fir, birch, oak, lime.

Marking, sawing, planing wood. Using nails and screws.

Visits to wood-work shops.

2. Working with metal. (12 *periods*) Ferrous and non-ferrous metals, iron, aluminium, brass. Steel, iron, copper and aluminium wire.

Marking, bending, drilling, joining sheet metal.

Visits to tinsmith or repair shop.

3. Combined wood and metal work and technical modelling. (18 *periods*)

Preparing and arranging the models for a school exhibition. (1 *period*)

Form 6 WOOD AND METAL WORK (*abridged*)

Introductory work. (1 *period*).

1. Working with wood. (12 *periods*)

Joining with pins and glue.

Visits to saw mills, mechanised shop or factory.

2. Working with metal. (12 *periods*) Ferrous and non-ferrous metals, cast iron and steel.

Hewing, correcting, cutting, sawing metal.

3. Combined wood and metal work and technical modelling. (18 *periods*) Using blue prints.

Visits to factories.

Preparing models for a school exhibition. (1 *period*)

Form 7 WOOD AND METAL WORK, ELECTRICITY SYSTEMS

Introduction. (1 *period*) Visit to factory.

1. Fretwork. (8 *periods*)

2. Combined wood and metal work and technical modelling. (20 *periods*)

3. Work with electrical equipment in the lighting system. (14 *periods*) Examination of the school lighting system.

Electrical equipment used in the home. Mending such equipment.

Preparing models for a school exhibition. (1 *period*)

PRACTICAL WORK ON THE SCHO· PLOT

Form 5 (22 *periods*)

1. Autumn work (5 *periods*). (*a*) Collecting and discussing the harvest sown the previous term, (*b*) working the soil, (*c*) autumn or winter sowing.

2. Spring work (17 *periods*). (*a*) Cultivating the seedlings, (*b*) spring working of soil, (*c*) sowing maize and other seeds, (*d*) transplanting cabbage plants, (*e*) sowing vegetable seedlings and potatoes, (*f*) care in sowing and planting.

Form 6 (22 *periods*)

1. Autumn work (11 *periods*). (*a*) Collecting and discussing the harvest from the school plot, (*b*) working the soil, (*c*) care of the orchard and autumn seed plot, (*d*) planting fruit trees.

2. Spring work (11 *periods*). (*a*) Spring working of soil, (*b*) care of

the orchard and plants, (*c*) planting berry-bearing bushes, (*d*) experiments with grain and industrial crops.

Form 7 (22 *periods*)

1. Collecting and discussing the harvest from the school plot. (2 *periods*)
2. Care of small domestic birds and animals (hens, rabbits, sheep, pigs), or of the young of large animals (calves, foals). (12 *periods*)
3. Battle against weeds on farms. (8 *periods*)

Practical Work on Machines

Form 8 (48 *periods*)

Introduction. Machine and machine-tool construction in the national economy of the USSR. Hand tools, machines and mechanisms. Prime movers, transmission mechanism and machine-tools. (2 *periods*) Theme 1: The basic fitting and assembling processes. (10 *periods*) Theme 2: Heat treatment of metal. (2 *periods*) Theme 3: Metal-working on lathes. (6 *periods*) Theme 4: Study of the basic details; construction and principles of machines and mechanism. (14 *periods*) Theme 5: Carrying out complex assembly involving the processes already learnt. (14 *periods*)

Form 9 (48 *periods*)

The Car

Introduction. (6 *periods*)

Theme 1: The car engine. (4 *periods*) Theme 2: Cylinder, piston and connecting rods, etc. The carburettor. (4 *periods*). Theme 3: The cooling system. (2 *periods*) Theme 4: The lubricating system. (4 *periods*) Theme 5: Fuel; quality and carburation. (6 *periods*) Theme 6: The ignition system. (4 *periods*) Theme 7: Power transmission of the car. (8 *periods*) Theme 8: Driving gears. (8 *periods*) Theme 9: The chassis. (6 *periods*)

Form 10

The Car Continuation. (18 *periods*)

Theme 1: The car engine. (4 *periods*) Theme 2: Driving the car and maintenance. (10 *periods*) Theme 3: The car industry (4 *periods*) through excursions.

NOTE: Under each theme heading practical work and excursions are included in the detailed notes.

Practical Agricultural Work in a City School

Form 8

Practical work in plant growing. (18 *periods*)

1. Soil and its preparation. (5 *periods*)
2. Fertilisers; amount and methods of using it for the most important crops. (2 *periods*)
3. Preparing seeds for sowing. (3 *periods*)
4. Sowing and planting summer crops. (8 *periods*)

Form 9

Practical work with animals. (18 *periods*)
1. Care of large horned cattle. (8 *periods*)
2. Feed; feeding milking herds. (6 *periods*)
3. Mechanised milking. Measuring the milk yield. (4 *periods*)

Practical Work in Agriculture and with Machines in Country Schools

Form 8

Practical work in plant growing and with agricultural machinery. (66 *periods*)
Introduction. (2 *periods*)
Soil and its uses in agronomy. Fertilisers.
The role of the soil in feeding plants with minerals. (6 *periods*)
Autumn working of the soil. Tools for this purpose (plough and cultivator). (10 *periods*)
Determining the quality of seeds and preparing them for storage. Seed-cleaning machines. (8 *periods*)
Studying sowing and planting machines (drill and potato-planter). Preplanting preparation of seeds. (16 *periods*). Spring preparation of the soil and fertilising it. (4 *periods*) Sowing grain, transplanting seedlings and planting potatoes. (10 *periods*)
Care of plants. (4 *periods*)

Form 9 (66 *periods*)

Practical work in agriculture and with machines continued. (6 *periods*)
Bringing in the harvest. (6 *periods*)
Practical work with animals. (30 *periods*)
Care of large horned cattle. (12 *periods*)
Feed; feeding milking herds. (12 *periods*)
Mechanised milking. Measuring the milk yield. (6 *periods*)
Practical work with machines. (30 *periods*)
Study of the basic details in the working of machines and mechanisms. (4 *periods*)
The Tractor. (26 *periods*)
General information about the tractor and its engine. (6 *periods*)
The engine in detail:

The carburettor. (6 *periods*)
The cooling system. (2 *periods*)
The lubricating system. (4 *periods*)
The ignition system. (2 *periods*)

Form 10

The Tractor continued. (14 *periods*)
Power transmission. (6 *periods*)
The driving gears of the tractor. (4 *periods*)
The chassis and wheels. (4 *periods*)
Excursions to machine-tractor station. (4 *periods*)

Electrotechnology

Form 10 (40 *periods*)

Introduction. (1 *period*)
Theme 1: Technical electrical measuring apparatus. (11 *periods*)
Theme 2: D.C. machines.
Electrical equipment of the automobile. (12 *periods*)
Theme 3: Alternate current: three-phase current. (12 *periods*)
Theme 4: Telephone and radio communication. (12 *periods*)

Mathematics Syllabus

ARITHMETIC

Form 5 (198 *periods*, 6 *periods a week*)

1. Whole numbers. 4 rules. Weights and measures. Area. Volume. (20 *periods*, 8 *periods of homework*)
2. Divisibility. (20, 8)[1]
3. Vulgar fractions. (90, 36)
4. Decimal fractions. (50, 20)
5. Practical work. Using instruments to measure distance and area. (6)
6. Revision. (12, 6)

Form 6 (66 *periods*, 4 *periods a week for the first half-year*)

1. Percentage. (20, 10)
2. Direct and inverse proportion. (32, 16)
3. Revision. (14, 7)

ALGEBRA

Form 6 (66 *periods*, 4 *periods a week for the second half-year*)

1. Algebraic expression. Equations (16, 8)

[1] The first figure is the number of teaching periods, the second the homework periods.

2. Positive and negative numbers. (20, 10)
3. Operations with algebraic expressions. Formulae for $(a \mp b)^2$, $(a+b)(a-b)$, $(a \mp b)^3$, $(a \mp b)(a^2 \pm ab + b^2)$.

Form 7 (132 *periods*, 4 *periods a week*)

1. Factorisation. (36, 18)
2. Algebraic fractions. (24, 12)
3. Equations of the first degree with one unknown. (34, 17)
4. Equations with two unknowns. Types of equations. Graphs. Proportion. (28, 14)
5. Revision. (10, 5)

Form 8 (116 *periods*, 4 *periods a week in the first half-year*, 3 *a week in the second half*)

1. Powers and roots. (44, 22)
2. Quadratic equations and equations which can be reduced to quadratic equations. (42, 21)
3. Functions and their graphs. (12, 6)
4. Equations of the second degree with two unknowns. (18, 9)

Form 9 (66 *periods*, 2 *periods a week*)

1. Limits. (6, 3)
2. Progressions. (14, 7)
3. Exponential and logarithmic functions. Logarithms. (40, 20)
4. Practical work with the slide rule. (6)

Form 10 (66 *periods*, 2 *periods a week*)

1. Combinations. The Binomial theorem. (12, 6)
2. Complex numbers. (12, 6)
3. Surds. (22, 11)
4. Equations of higher degree. (12, 6)
5. Revision. (8, 4)

GEOMETRY AND TRIGONOMETRY

Form 6 (66 *periods*, 2 *periods a week*)

1. Basic concepts. (14, 7)
2. Parallel lines. (16, 8)
3. Triangles. (32, 16)
4. Practical work. (4)

Form 7 (66 *periods*, 2 *periods a week*)

1. Quadrilaterals. (26, 13)
2. The circle. (34, 17)
3. Practical work. (6)

Form 8 (82 *periods*, 2 *periods a week in the first half-year*, 3 *a week in the second*)

1. Segments. (10, 5)
2. Similarity and proportion. (18, 9)
3. Mensuration of triangle and circle. (36, 18)
4. Area of polygons. (14, 7)
5. Practical work. (4)

Form 9 (66 *periods*, 2 *a week*)

1. Regular polygons. (12, 6)
2. Circumference and area of circle and segments of circle. (10, 5)
3. Solid geometry. (40, 20)
4. Practical work. (4)

Trigonometry (66 *periods*, 2 *periods a week*)

1. Trigonometrical ratios of any angle. (10, 5)
2. Algebraic relations of trigonometrical ratios. (16, 8)
3. Circular measure. (16, 8)
4. Trigonometrical formulae for any angle. (16, 8)
5. Sum and difference of two angles. (24, 12)

Form 10 *Geometry* (66 *periods*, 2 *a week*)

1. Polyhedra. (28, 14)
2. Mensuration of solids. (20, 10)
3. Revision and solution of problems. (18, 9)

Trigonometry (66 *periods*, 2 *a week*)

1. Solution of triangles (18, 9)
2. Inverse trigonometrical functions. (14, 7)
3. Trigonometrical equations. (16, 8)
4. Practical work. (6)
5. Revision and solution of problems. (12, 6)

APPENDIX III

School Leaving Examination Questions in the Russian Republic (RSFSR) for Class 10

These are published in a booklet some weeks before the examination. They are usually copied on to cards by the subject teacher. One of these topics is put on each card, together with a problem made up by the teacher. The booklet is available for pupils to read but the cards are not seen until the actual examination.

ALGEBRA

CARD NO 1

1. Permutations and combinations. Number of arrangements of things taken at a time. Number of permutations of things taken all together.
2. Problem or example.
3. Quadratic equations. Complete and incomplete quadratics. Solutions of quadratic equations of the form
   (i) $x^2+px+q=0$ and (ii) $ax^2+bx+c=0$

CARD NO 2

1. Combinations. Number of combinations of m things n at a time. The equation: C_m^n C_m^{m-n}
2. Problem or example.
3. Calculation of several percentages of a given number, and the converse problem.

CARD NO 3

1. Multiplication of binomials differing only in the second term.
2. Problem or example.
3. Investigation of the roots of a quadratic equation from its discriminant and coefficients.

CARD NO 4

1. Newton's binomial theorem (proof).
2. Problem or example.
3. Sum and product of the roots of a quadratic in terms of the coefficients.

CARD NO 5

1. Equality of the coefficients of terms equidistant from the beginning and the end of Newton's binomial expansion. General term of the expansion. Sum of the binomial coefficients.

2. Problem or example.
3. Resolution of a trinomial of the second degree into lineal factors.

CARD NO 6

1. Imaginary numbers. Complex numbers. Modulus of a complex number. Condition that a complex number may vanish. Condition of the equality of two complex numbers.
2. Problem or example.
3. The exponential function. Properties and graph of the function.

CARD NO 7

1. Addition and subtraction of complex number in the algebraic form.
2. Problem or example.
3. The logarithmic function, its properties and graph.

CARD NO 8

1. Multiplication and division of complex numbers in the algebraic form.
2. Problem or example.
3. The arithmetical progression. Formula for the sum of the terms.

CARD NO 9

1. Geometrical interpretation of the complex number. Trigonometrical form of the complex number.
2. Problem or example.
3. Determination of the percentage relation of two numbers.

CARD NO 10

1. Investigation of a quadratic trinomial (positive discriminant).
2. Problem or example.
3. The logarithm of a product.

CARD NO 11

1. Inequalities. Fundamental properties of inequalities. Addition and subtraction of inequalities.
2. Problem or example.
3. Logarithm of a quotient.

CARD NO 12

1. Equivalent inequalities. Theorem of the equivalence of inequalities when the same quantity is added to each side.
2. Problem or example.
3. Logarithms of a power or root.

CARD NO 13

1. Theorem of the equivalence of inequalities when each side is divided or multiplied by the same positive or negative quantity.

2. Problem or example.
3. Logarithms to base 10 and their properties.

CARD NO 14

1. Solution of inequalities of the first degree with one unknown. Solution of a system of inequalities of the first degree with one unknown
2. Problem or example.
3. The linear function and its graph.

CARD NO 15

1. Investigation of the equation of the first degree with one unknown.
2. Problem or example.
3. Formula of any required term of an arithmetical progression.

CARD NO 16

1. Investigation of a system of two linear equations with two unknowns.
2. Problem or example.
3. Direct proportional dependence and its graph.

CARD NO 17

1. Investigation of the quadratic trinomial when the discriminant is negative or zero.
2. Problem or example.
3. Proportion. Fundamental properties of proportion. Determination of the unknown member of a proportion.

CARD NO 18

1. Solution of an inequality of the second degree with one unknown.
2. Problem or example.
2. Ratio of two numbers. Substitution of the ratio of two whole numbers for the ratio of two fra ns.

CARD NO 19

1. Remainder theorem and its use.
2. Problem or example.
3. Inverse proportional dependence and its graph.

CARD NO 20

1. Solution of binomial equations of the third, fourth and sixth degrees.
2. Problem or example.
3. Geometrical progression. Expression for any required term.

CARD NO 21

1. Solution of trinomial equations.

2. Problem or example.
3. Sum of terms of a geometrical progression.

CHEMISTRY

CARD NO 1

1. Fundamentals of the atomic theory. Formation of molecules with ionic and co-valent bonds.
2. Iron. Ferrous and ferric oxides and their hydrates. Green vitriol.
3. Problem: to carry out the reactions characteristic of the given organic compound.

CARD NO 2

1. Law of conservation of mass. M. V. Lomonosov as an outstanding chemist.
2. Aluminium. Production of aluminium. Aluminium hydroxide.
3. Problem: to carry out reactions characteristic of the given inorganic compound.

CARD NO 3

1. Atomic structure. Isotopes.
2. Production of cast iron.
3. Problem: to carry out reactions characteristic of the given organic compound.

CARD NO 4

1. Fundamentals of the electrolytic dissociation theory.
2. Production of steel.
3. Problem: to carry out reactions characteristic of the given inorganic compound.

CARD NO 5

1. Bases. Explanation of their properties from the point of view of the electrolytic dissociation theory.
2. Methane: its composition, physical and chemical properties, and uses.
3. Problem: to prepare and collect hydrogen, and show that it is a light and inflammable gas.

CARD NO 6

1. Acids. Explanation of their properties from the point of view of the electrolytic dissociation theory.
2. Ethylene: its composition, physical and chemical properties, preparation and uses.
3. Problem: to prepare and collect carbon dioxide, and to show experimentally that the gas obtained is really carbon dioxide.

CARD NO 7

1. Salts. Explanation of their properties from the point of view of the electrolytic dissociation theory.
2. Acetylene: its composition, physical and chemical properties, preparation and uses.
3. Problem: to calculate how much of the given compound is obtained in a reaction, given definite quantities of the reacting substances, one of which is present in excess.

CARD NO 8

1. The periodic law and Mendeleyev's periodic system.
2. Hydrogen: structure of its atom, physical and chemical properties, preparation and uses.
3. Problem: to calculate the percentage of the theoretical yield obtained, given the quantities of the reacting substances and the quantity of the product.

CARD NO 9

1. Water. Physical and chemical properties.
2. Nitric acid and its salts.
3. Problem: to calculate the volume of a gas required to react with a given volume of another gas.

CARD NO 10

1. Bromine and iodine. Their physical and chemical properties, preparation and uses.
2. Benzol: its composition, physical and chemical properties, preparation and uses.
3. Problem: to prepare a definite quantity of a solution of a certain molar concentration.

CARD NO 11

1. Hydrogen chloride and hydrochloric acid. Production of hydrochloric acid.
2. Potassium: structure of its atom, and its physical and chemical properties. Its preparation. Caustic potash.
3. Problem: to carry through reactions characteristic of the given organic compound.

CARD NO 12

1. Chlorine: atomic structure, physical and chemical properties, preparation and uses.
2. Petroleum. Methods of refining and most important products.
3. Problem: to carry out reactions confirming the qualitative composition of the given inorganic compound, and to calculate, on the basis of its formula, the percentage content of one of its elements.

CARD NO 13

1. Oxygen. Ozone. The phenomenon of allotropy.
2. The dry distillation of coal.
3. Problem: to carry out reactions characteristic of the given inorganic compound.

CARD NO 14

1. Oxides: their classification and chemical properties.
2. Ethyl alcohol: its composition, physical and chemical properties, preparation and uses.
3. Problem: to prepare a small quantity of hydrochloric acid and to carry out qualitative experiments with it.

CARD NO 15

1. Sulphur: atomic structure, physical and chemical properties, preparation, and uses in industry and agriculture. Sulphuretted hydrogen.
2. A. M. Butlerov's theory of the structure of organic compounds. Isomerism.
3. Problem: to calculate the weight of the product of a reaction, given that definite quantities of the reactants in the form of solutions of definite percentage concentration were taken.

CARD NO 16

1. Sulphuric acid: its composition, physical and chemical properties, and uses and significance in economic life.
2. Glycerine: its composition, physical and chemical properties, preparation and uses.
3. Problem: to calculate the volume of a certain gas obtained from a given quantity of an initial substance containing a known quantity of impurities.

CARD NO 17

1. The contact process for the production of sulphuric acid.
2. Formaldehyde: composition, physical and chemical properties, preparation, and application in industry and agriculture.
3. Problem: to distinguish between the three given inorganic compounds by means of characteristic reactions.

CARD NO 18

1. Nitrogen. Oxide and dioxide of nitrogen.
2. Phenol: composition, physical and chemical properties, preparation and applications.
3. Problem: to prepare the named substance by an exchange reaction and to separate it from impurities. Calculate from the reaction equation what quantity of the reaction substances is required to produce a given quantity of the product.

APPENDIX III

CARD NO 19

1. Ammonia and ammonium salts. Production of ammonia.
2. Mixed ethers: composition, physical and chemical properties and applications.
3. Problem: to prepare a definite quantity of a solution of definite percentage concentration.

CARD NO 20

1. Phosphorus: atomic structure, allotropic forms, physical and chemical properties and uses.
2. Glucose: composition, physical and chemical properties and uses.
3. Problem: to carry out reactions verifying the qualitative composition of the given inorganic compound. To calculate on the basis of its formula the percentage content of one of its elements.

CARD NO 21

1. The principal mineral fertilisers (nitrogenous, phosphoric and potassic).
2. Acetic acid: composition, physical and chemical properties, preparation and uses.
3. Problem: to obtain the named substance by a substitution reaction and to free it from impurities. To calculate from the reaction equation how much of each of the reactants would be required in order to obtain a given quantity of the product.

CARD NO 22

1. Carbon. Carbon monoxide. Generator gases—air and water.
2. Beet sugar: composition, physical and chemical properties.
3. Problem: to prepare and collect ammonia, and show experimentally that the gas obtained is ılly ammonia.

CARD NO 23

1. Carbonic acid gas: composition, physical and chemical properties, preparation and uses.
2. Fats: composition, physical and chemical properties, applications.
3. Problem: to calculate the weight of the product of a reaction, if definite quantities of the reactants are taken containing known quantities of impurities.

CARD NO 24

1. Silicon. Silicon dioxide. Silicates. Uses of silicates in industry.
2. Starch: composition, physical and chemical properties and uses.
3. Problem: to identify by means of characteristic reactions each of the three given inorganic substances.

CARD NO 25

1. Physical and chemical properties of metals.
2. Cellulose: composition, physical and chemical properties, and uses.
3. Problem: to calculate the volumes of reacting gases necessary to obtain a given weight of the named substance.

CARD NO 26

1. Sodium: atomic structure, physical and chemical properties, preparation and uses.
2. Aniline: composition, physical and chemical properties, preparation and industrial uses.
3. Problem: to prepare and collect oxygen and show experimentally that the gas obtained is really oxygen.

CARD NO 27

1. Calcium. Oxide and hydroxide of calcium.
2. Avogadro's law. Molecular weight and density of a gas.
3. Problem: to carry out reactions characteristic of the given inorganic substance.

CARD NO 28

1. Salts of calcium. Hardness of water.
2. Electrolysis of molten salts and solutions.
3. Problem: to carry out reactions characteristic of the given organic compound.

PHYSICS

CARD NO 1

1. The electric charge. The electric field. Coulomb's Law. Unit of quantity of electricity.
2. Uniformly accelerated motion. Acceleration. Velocity in uniformly accelerated motion. Velocity curve. Proof of formula for the space covered in uniformly accelerated motion.

CARD NO 2

1. Intensity of the electric field. Lines of force. Uniform field.
2. Newton's first law. Examples from industry.

CARD NO 3

1. Conductors and dielectrics in the electric field. Dielectric constant.
2. Newton's second law. Examples from industry.

CARD NO 4

1. Work done in moving a charge in a uniform electric field. Potential difference. Unit of potential difference.

2. Newton's third law and its use in industry.
3. Laboratory work: experimental verification of the Boyle-Mariott law.

CARD NO 5

1. Electrical capacity. Units of capacity. Condensers and their use.
2. Law of universal gravitation.

CARD NO 6

1. Cathode rays. Emission of electrons by hot bodies. Electronic tubes.
2. Free-falling bodies.
3. Laboratory work: determination of the surface tension of water.

CARD NO 7

1. Electrolysis. Faraday's laws. Use of electrolysis in industry.
2. Motion of a body projected at an angle to the horizontal.

CARD NO 8

1. Conductors in series. Proof of formula for the total resistance of conductors in series. Auxiliary resistance in voltmeters.
2. Circular motion. Acceleration towards the centre (without proof of formula). Centrifugal force. Centrifugal mechanisms and their use in industry and agriculture.

CARD NO 9

1. Conductors in parallel. Proof of formula for resistance of conductors in series. Shunts for ammeters. Use of parallel resistances in industry.
2. Composition of forces not in the same straight line. Resolution of forces into components at an angle to each other. Examples from industry.

CARD NO 10

1. Electromotive force of a source of current. Ohm's law for all networks.
2. Equilibrium of forces acting on a solid body having an axis of rotation. Moments and their application in industry.
3. Laboratory work: determination of the index of refraction of a substance.

CARD NO 11

1. Work done by the electric current. Law of Joule and Lenz. Electric welding.
2. Centre of gravity. Forms of equilibrium of bodies. (Illustrate by examples from industry.)

CARD NO 12

1. Magnetic field of a straight current and of a solenoid. Action of a magnetic field on a current. Intensity of a magnetic field. Magnetic flux.
2. Vibrations in an elastic medium and the formation of waves (transverse and longitudinal). Wave length.

CARD NO 13

1. Iron in a magnetic field. The electromagnet. The electromagnetic field.
2. Vibratory motion (as in the simple pendulum). Amplitude, period, frequency. Laws of vibration of the pendulum. Applications of the pendulum.

CARD NO 14

1. The oscillograph. The microphone and the telephone. The loudspeaker.
2. Kinetic and potential energy. Proof of the expression for kinetic energy. Formula for the potential energy of a raised body.

CARD NO 15

1. Electromagnetic induction. Conditions determining the magnitude of the electromotive force of the induced current. Lenz's Law.
2. Production and propagation of sound. Velocity of sound. Use of acoustic phenomena in industry.
3. Determination of the specific gravity of a body by weighing in water.

CARD NO 16

1. Production of alternating current. Period, frequency and phase. Alternating current generators.
2. Pressure in a moving liquid or gas. Lifting force of an aeroplane. Significance of N. E. Zhukovsky's work in the sphere of aviation.

CARD NO 17

1. Concept of the three-phase current. Principles of construction of the three-phase motor.
2. Pascal's law. The hydraulic press.

CARD NO 18

1. Rectification of alternating current. The electron tube as rectifier. Continuous current generator.
2. Foundations of kinetic theory. Diffusion and the Brownian motion.

APPENDIX III

CARD NO 19

1. Transformation of the current. Transmission and distribution of electrical energy. Success of the electrification of the USSR. Application of electric motors in industry, agriculture, and transport.
2. Expansion of bodies on heating. Coefficient of linear and volume expansion. Allowing for thermal expansion in industry.

CARD NO 20

1. The oscillating circuit. Transformation of energy in the oscillating circuit. Production of undamped oscillations. Electrical resonance.
2. Thermal expansion of gases. Gay-Lussac's law. Absolute temperature.

CARD NO 21

1. Popov's invention of radio. Principles of radio transmission (amplitude modulation). Diagram of a radio receiver with a detector and a very simple valve circuit.
2. Gas pressure from the point of view of the kinetic theory. The Boyle-Mariott law.

CARD NO 22

1. The flux of light, luminosity and illumination. Laws of illumination. The photometer.
2. The combined laws of Boyle-Mariott and Gay-Lussac.

CARD NO 23

1. Phenomena of the reflexion and refraction of light. Index of refraction. Total internal reflexion of light.
2. Surface tension in liquids.
3. Laboratory work: determination of the efficiency of a simple mechanism.

CARD NO 24

1. Lenses. Deduction of the lenses formulae. Optical strength of a lens. The production of images by a lens.
2. The phenomena of wetting. Capillary phenomena in life and agriculture.

CARD NO 25

1. Optical apparatus and its value. Path of rays in the microscope and the telescope.
2. Elasticity of a solid body. Hooke's law.

CARD NO 26

1. Interference and diffraction of light. Length of light waves.

2. Mechanical-equivalent of heat. Law of transformation and conservation of energy.
3. Laboratory work: determination of the specific resistance of a conductor.

CARD NO 27

1. Dispersion of light. The visible, infra-red and ultra-violet portions of the spectrum.
2. The fusion of bodies and its explanation on the kinetic theory of matter.
3. Laboratory work: determination of the internal resistance of a source of current.

CARD NO 28

1. Continuous and line spectra. Absorption of spectra. Spectrum analysis and its applications.
2. Boiling. Dependence of boiling point on pressure. Applications in industry.

CARD NO 29

1. Rontgen rays. Use of Rontgen rays in medicine and industry.
2. Evaporation. Explanation of evaporation on the kinetic theory of matter.

CARD NO 30

1. The photo-electric effect. Stoletov's work on the photo-electric effect. Concept of quanta. Photo-elements and their applications.
2. Saturated and unsaturated vapours. Relation between the pressure and volume of a vapour at constant temperature.

CARD NO 31

1. Photo-luminescence and its uses. Pressure of light.
2. Relative and absolute humidity. The psychrometer.

CARD NO 32

1. Atomic structure—electron shells and nucleus. Radiation and absorption of energy by the atom.
2. Conditions of working of heat engines. Efficiency of a heat engine.

CARD NO 33

1. Structure of the atomic nucleus. Break-up of the uranium nucleus. Output of energy in atomic disintegration.
2. Methods of improving the practical efficiency of heat engines (steam engine, internal combustion engine).